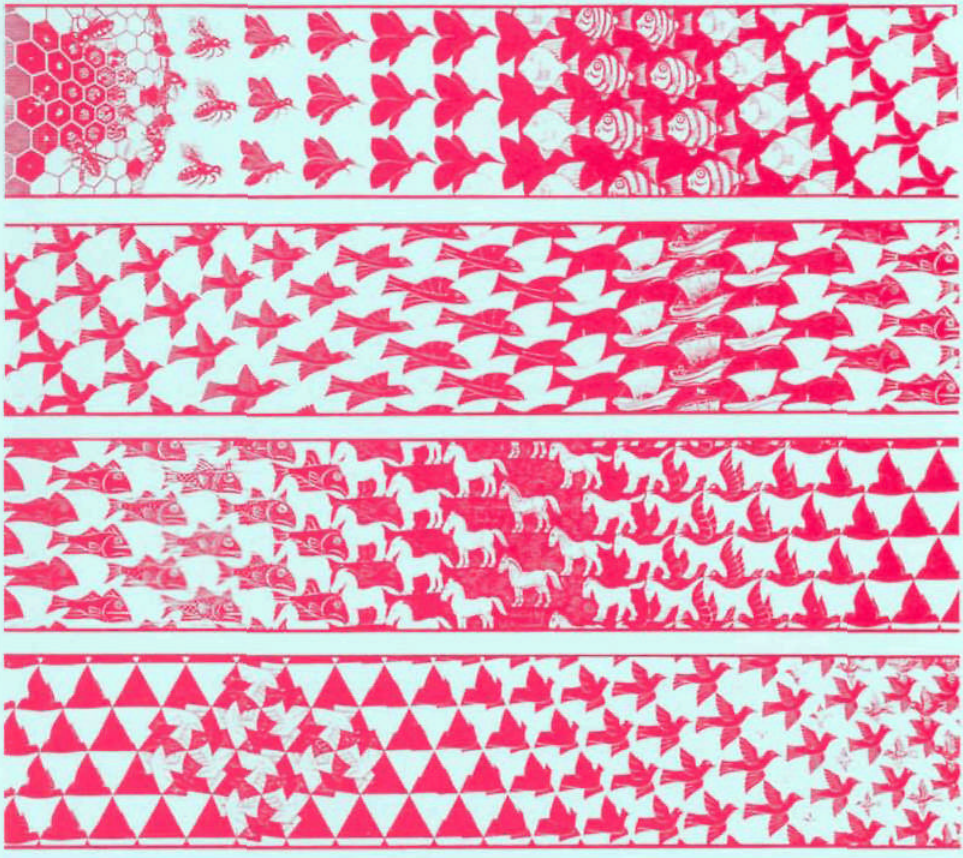
the Skeptical Inquirer

Proving Negatives and the Paranormal



Debunking, Neutrality, and Skepticism
Belief in the Paranormal Worldwide
The Gribbin Effect / Reducing Fringe Beliefs
CSICOP's Conference on Science and Skepticism

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the Skeptical Inquirer

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News and Comment

From Psychics and ESP Beliefs to UFOs and Quacks: Highlights of CSICOP's First International Conference

A psychic is an actor playing the role of a psychic.

—Cornell psychologist Daryl Bem

We are babes in the woods when it comes to judging what is surprising and what is not surprising.

—Stanford psychologist Lee Ross

Let's not confuse open-mindedness with blank-mindedness.

—McGill Univ. philosopher Mario Bunge

CSICOP's first international conference since its founding in 1976 attracted scholars and observers of the paranormal scene from round the world to the SUNY-Buffalo campus for an intellectual feast of discussion and evaluation. "Science, Skepticism, and the Paranormal" was the conference theme, and in seven symposia over a packed two-day period, October 28-29, 1983, the talk focused on virtually every topic and approach to the paranormal.

Judging from the comments of participants and audience members in hallway, dinner-table, and after-hours discussions and from the letters of appreciation chairman Paul Kurtz and CSICOP's Buffalo staff have received since, the conference was an enormous success.

What follows are only a few highlights. Many of the talks will appear as articles in future SKEPTICAL INQUIRER issues.

Where Stands Parapsychology?

The opening session, "The Evidence for Parapsychology," should have been titled "Is There Any Evidence for Parapsychology?" said moderator Irving Biederman, a SUNY-Buffalo psychologist. Two of the speakers took a critical stance. University of Toronto psychologist James E. Alcock reviewed events in parapsychology over the past seven years and concluded that the proponents of the paranormal had produced nothing of substance to place their field on any surer ground. A reliably demonstrated phenomenon still eludes everyone.

As a result, parapsychologists are increasingly turning toward statistical arguments and to a proliferation of wild claims and esoteric-sounding theories like "retroactive psychokinesis" and quantum mechanics. This indulgence in imaginative hypotheses as a substitute

Clockwise from left: Morris, Hansel, Alcock

for convincing data has reduced the credibility of psi claims even more, Alcock concluded. So has another strategy in lieu of strong evidence about any particular case—the contention that psi is commonplace. "The parapsychologists' argument that psi is evident everywhere weakens the argument for psi." Alcock said he would like to ask, when is psi not present?

C. E. M. Hansel, the University of Wales psychologist known for his meticulous critiques, reviewed many of the "classic" parapsychology experiments that once offered so much hope to proponents. All have fallen by the wayside now. So much time and effort by so many people has been wasted. "If 40 years ago one had applied the criterion that one must have a repeatable demonstration of the facts, a great deal of trouble would have been saved," said Hansel.

In contrast, Robert Morris of Syracuse University, a respected leader of the Parapsychological Association, expressed hope that something might be salvaged. "My concern is whether there is still a residue of useful information," said Morris. "If there's really nothing there, then that fact should be documented carefully and pleasantly." Some of the more emotional criticisms, he complained, have turned people off and detracted from the common goals of determining the truth. Morris, who acknowledged that it may be his "high tolerance for ambiguity" that has kept him in this field, said critics need to recognize that the problem of replication is more subtle and less clear-cut than often stated. He pointed to several experiments where "there appears to be partial replication" and called for intelligent criticism and active cooperation between critic and researcher.

Philosophy and Parascience

In the session on "Parascience and the Philosophy of Science" two distinguished philosophers took noticeably different tacks.

Mario Bunge, Frothingham Professor of Logic and Metaphysics at McGill University, Montreal, offered a detailed set of criteria for demarcating science from pseudoscience. He contrasted several dozen attitudes and activities of scientists and pseudoscientists. Examples: Science is a community of research fields, not believers. Science changes, pseudoscience clings to dogma. Scientists look for counterexamples, pseudoscientists ignore them. Science attempts to find or apply systematic laws, pseudoscientists dwell on anecdote. And so on. He characterized pseudoscience as "a body of beliefs and practices but seldom a field of active inquiry." Applying his own criteria, Bunge concluded that parapsychology is a pseudoscience. ("Has anyone heard of the First Law of Clairvoyance, or the Second Law of Telepathy, or the Third Law of Spooks?")

Stephen Toulmin, professor of social thought and philosophy at the University of Chicago, called for a wider, more historical perspective on such controversies. Sharp and permanent lines between "scientific" and "unscientific" theories are not always possible or wise, he said. He pointed out that the concept of "abnormal" in its modern sense dates back only to about 1840. He cautioned that a whole variety of phenomena were once considered by detractors to be "paranormal" or unnatural. Critics of Newton's law of gravity implied that for it to be true the sun would sometimes have to give the planets a "come hither" look. This Toulmin called "inappropriate psychologization." Newton realized that there could be nonmaterial as well as material influences.

Other topics once thought paranormal or inconsistent with physics include hypnotism, cross-genetic hybridization, the molecular basis of genetics, the electron, and Darwin's theory of evolution (the latter because until the discovery of the heat of radioactive decay in the earth's interior there was no physical way to explain how the earth could have remained warm enough to support life for more than 25 million years). Toulmin said his cautionary statements do not argue for any kind of fashionable relativism or for

Toulmin (left) and Bunge

Clockwise from right: Hyman, Benassi, Bem, and Ross.

tolerance of quackery and charlatanism, only that it is necessary "to be discriminating even in our own skepticism."

What You Believe Is What You See

Four psychologists put on a fascinating session on "Why People Believe: The Psychology of Deception." Moderator Ray Hyman (University of Oregon) emphasized that the problems begin because many of the physiological systems we use for visual sensory input are the same processes we use for visual imagination. These processes "can lead us astray."

Victor Benassi of the University of New Hampshire described research on the effects of personal experience on belief. Personal experience is one of the major variables affecting belief in ESP, for instance. Experiments have shown that it is possible in the laboratory to induce ESP beliefs, while the now famous classroom experiments he and Barry Singer did (see *SI*, Winter 1980-81, pp. 17-33) show how strongly people cling to beliefs in paranormal abilities even when they are presented with clear evidence that they have been fooled.

Lee Ross of Stanford University emphasized the difficulty all of us have

in perceiving randomness. "Lots of events that are random look *non*random," he said. "Something happens that on the surface seems surprising. How surprising is it?" Few people have the tools to competently judge, and we almost always overestimate the degree to which a coincidence of two events is improbable. When we run into someone we went to school with while visiting the Sorbonne on our one trip to Paris, we may think that is an amazing, mind-boggling coincidence. If we had seen him in say, the Palais Royale, would that have been equally surprising? If the person had been the *wife* of someone we went to school with, shouldn't that have been equally surprising? Wouldn't all sorts of other elements work to surprise us too? We usually don't define the event in the right way. "The right way is to ask, How surprising is it that *at least one thing that surprising* would happen?"

Said Ross: "A lot of events that seem improbable only seem improbable because we don't know how to calculate the mathematics. And a lot of times events that seem improbable seem improbable because we haven't defined the class of each one well enough." And when someone comes along to propose a model to explain these "improbabilities"—ESP, for instance—it is very easy to become a believer.

Cornell psychologist Daryl Bem illustrated how he introduces students to these topics by demonstrating, with "cold reading" methods and a magician's deceptions, how they can be led to believe that extrasensory powers are operating. Then he lets them see how they were deceived. The message gets across, he said, although they usually aren't happy with it. (Bem even pulled several *double* whammies at the conference; he managed to fool most of the audience—even though, by a show of hands, it included scores of amateur and professional magicians—about the means he was using to fool them.)

Bem started doing "psychic" routines when he was 13. "I was quite amoral about it. But eventually I decided I wanted to be a university professor and inform people, not misinform them."

He says the act of playing a "psychic" reader is easy because so many believe in, and want to believe in, ESP. They thus become unwitting parties to the deception.

But he also cautioned the audience not to laugh at people who are fooled. "People who are fooled are not irrational, are not gullible. They are using the same processes by which we process information." It is just that, to them, once they have been fooled, psychic ability is the hypothesis that seems best to fit their perceptions of the event.

Alpha Aftermath

At an evening session James Randi and the young magicians of Project Alpha, Steve Shaw and Michael Edwards (*SI*, Summer and Fall 1983), described how easy it had been for them to deceive the scientists at Washington University into believing they had psychokinetic abilities. The reason it was easy, they said, is that the scientists wanted to believe.

As a result the scientists' controls were minimal and their testing methods naive—all this despite written warnings in advance from Randi and some accurate rumors that Shaw and Edwards were plants.

Both young magicians said that although the project was psychologically difficult for them—they grew to like the scientists who believed so strongly in them—the experiment "had to be done." The lesson they hope it taught may have been painful to the

Shaw demonstrating fork-tine bending

scientists and to their colleagues in parapsychology, but it was necessary to show how poorly controlled "scientific" tests of psychics can deceive the public into believing in psi powers.

Even after their ruse was revealed, both Shaw and Edwards—to their amazement—encountered people who questioned whether they really do have psychic abilities without realizing it. Edwards said that even after all the publicity the experiment has received, the willingness to believe in psychic phenomena is so strong that, if they wanted to, they could successfully repeat their deception with other scientists.

Shaw spoke of the misplaced awe people held them in when they were "psychics"—and of the temptations psychics are offered. "When I was a 'psychic,' " Shaw said, "people sent me money. They asked me to bless them."

Shaw said one of his worst moments was trying to relieve one of the parapsychologists of the misimpression that Shaw had an ability to cure a seriously ill child. He was horrified by the man's misplaced but almost desperate belief in psychic abilities.

"It really scares you," said Edwards. When the *National Enquirer* did a story about his "psychic powers," he received "tons of mail, people asking for lucky numbers, lost children. People were basically asking me to help them guide their lives. The whole psychic field is awfully scary. Holding people's lives in your hands—it was too easy to mess up."

Tales of the Night

Not all of the sessions dealt with "psychics" or parapsychology. An evening symposium combined the two topics of UFO abduction stories and cattle mutilation reports. These subjects might not seem to have much in common, but they both fall prey to the hazards of human testimony and the mythmaking ability of the "news" media. Robert Sheaffer examined the Betty Hill UFO "abduction" case. Despite its inherent absurdity and the absence of any credibility in Mrs. Hill, this hypnosis-related tale is still clung to by some UFO proponents. Sheaffer, who has met Mrs. Hill, emphasized he has never questioned her sincerity in believing what she says is true. The question at issue is whether the beliefs are based on reality. Neither hypnosis (her hypnotist said he considered her story a fantasy) nor lie detectors can determine that.

Sheaffer lambasted the syndicated TV show "Lie Detector' for not emphasizing that distinction after showing that she was not "lying" when relating key points of her story. Furthermore the programs failed to mention any of her more recent UFO claims, "which are straining even the near-boundless credulity of many UFO believers." Among them are her discovery of a "UFO landing spot" in New Hampshire where she goes three times a week to watch alien craft. As for her

famous star map, "Astronomers are almost unanimous in rejecting the supposed "UFO star-map as proving anything at all." He called "Lie Detector" 's treatment of the star-map question "but a single example of the media's frequently irresponsible treatment of UFOs and other 'paranormal' subjects."

Kenneth Rommel, Jr., the former FBI agent who conducted a federally funded study of cattle mutilation reports for the District Attorney (First Judicial District) of the state of New Mexico (*SI*, Fall 1980), regaled the audience with some of his experiences. Before taking on the study, Rommel had spent 28 years on FBI assignments in the United States and abroad, including bank-robbery and counter-espionage investigations. He said he thought he had encountered every type of character there was, "but the one year I spent on the cattle-mutilation investigation I met an entirely new breed of unusual people." One person who volunteered to help said he had a special ability to blend into the grass. ("Tall grass or short grass?" Rommel asked.) He needed only $10,000. A woman who claimed she could tell when people were witches wanted only $6,000. A 78-year-old woman told him she loved cattle mutilations and went to every one she could.

Sheaffer

Rommel

Rommel illustrated his talk with abundant photos of "mutilated" cattle. The term "surgical precision" was used by almost every rancher and journalist who reported "mutilations," but nothing more precise than a lot of ripping and tearing by predators and scavengers was evident in the photos. Everyone in northern New Mexico seemed to have gotten caught up in the mythology of the moment, said Rommel—the press (which he documented "did a lot of creative writing"), the ranchers, and some law-enforcement officers. One state patrolman helped promote many of the most outlandish reports. A sheriff said the cattle looked as if they had been operated on by laser surgery. Asked Rommel, "What did this Sheriff Numbnutz know about laser surgery?"

Rommel's official report, *Operation Animal Mutilation*, concluded that the cattle in question had died of natural causes and then been subject to the action of animals and birds, not highly skilled surgeons. It stands as the definitive work on the subject, and at least in New Mexico little has been heard about "cattle mutilations" since.

The Harm of Belief

The participants in the symposium on "Paranormal Health Cures" have had to deal directly with one issue that specialists on the other symposium subjects can treat as a side issue: harm to the individual. Moderator William Jarvis, president of the California Council Against Health Fraud and co-chairman of CSICOP's Paranormal Health Claims Subcommittee, emphasized that such claims can be highly dangerous. They can waste victims' money, which could be better spent on medicines and hospitalization. As with laetrile, they can persuade people to take bogus remedies in lieu of valid medical treatments. They encourage misplaced trust in charlatans.

Stephen Barrett, M.D., an active campaigner against health fraud and Jarvis's co-chairman on the CSICOP subcommittee, cautioned that it is a mistake to say victims of quackery are gullible. He estimated that 10 percent of the American people are fairly sophisticated and difficult to trick, and another 10 percent "believe in just about everything." But the 80 percent in the middle "are willing to believe what science says, if only they could tell what science says." The problem they face is how to tell what is science and what isn't. When in doubt, he says, people will believe what they hear the most. Ad agencies know this well. So do quacks.

"You're in a sea of misinformation on health," Barrett lamented. Lest the audience at the CSICOP meeting consider themselves immune to these influences, Barrett polled them on their use of vitamin supplements. He was amazed to find a high proportion took vitamins. He then informed them that with only a few exceptions Americans eat a balanced enough diet not to need any vitamins beyond those contained in their food. Vitamin manufacturers have convinced the public otherwise.

Lowell D. Streiker, executive director of the Freedom Counseling Center, Inc., in Burlingame, Calif., dealt at length with the ways cults and religious sects can abuse the rights of children. One of many examples cited was the death of a 10-year-old Woodbury, New Jersey, child in July 1983 of complications from untreated juvenile diabetes. Her parents, members of an "unorganized religious sect," hid the body and held daily worship services, waiting for resurrection. Police found the partially decomposed body in September. A court order was necessary to force the parents to bury the child. Streiker related a research study that found that children of cult members "tend to be more physically abused" than those of parents not in sects. Many of the cult parents he has encountered are caring, loving people, Streiker said, but the demands of "powerful and

From left: Jarvis, Barrett, Swan, and Streiker

manipulative" cult leaders often enforce a greater allegiance to their whims than to the basic needs of the children.

Rita Swan was a member of the Christian Science church for more than 30 years. She abandoned it after she learned that her infant son's death from meningitis could have been avoided had she not followed the church's teachings that sickness is an illusion that should be ignored. She related her experience in coming to this painful realization. She is now suing the church for her son's death and, as president of CHILD (Children's Healthcare Is a Legal Duty, Inc.), is urging legislation to protect the rights of children of church members. Virtually all the lobbying for statutory recognition of "faith healing" is done by the Christian Science church, Swan said.

* * * * *

The CSICOP conference ended late on a Saturday night, and the participants and audience members ultimately dispersed. Not everyone agreed with everything said—indeed the discussions during and after the sessions were lively—but everyone we talked to agreed it was one of the more stimulating and well-run meetings they had ever attended. This thought was reiterated in the letters received by the Buffalo CSICOP office. "Let me add my voice to the many that will, I am quite sure, be telling you how successful the conference was," began one from a university professor. Another, from a man in Michigan, said simply that the conference provided two of the "most exciting and rewarding days of my life. . . . The schedule was exhausting and its execution brutal, but it was worth it. . . . It was magnificent in all ways."

—*Kendrick Frazier*

Coming of Age in Buffalo: Reflections on the 1983 CSICOP Conference

To supplement our coverage of CSICOP's first international symposium, "Science, Skepticism, and the Paranormal," October 28-29, 1983, at the State University of New York at Buffalo, we invited Piet Hein Hoebens to offer his observations. Hoebens has gained an international reputation as a perceptive independent observer of paranormal debates.—ED.

IN THE EIGHT years that have elapsed since its inception, the Committee for the Scientific Investigation of Claims of the Paranormal has not only made a formidable number of friends; it has also attracted an equally formidable array of devoted foes. This does not come as a surprise. In terms of visibility, impact, and newsworthiness the Committee has been far more successful than its founders could reasonably have expected in 1976, and this very success poses a potential threat to the individuals and groups whose activities come within the range of the Committee's skeptical curiosity. The anti-CSICOP literature published hitherto fills a small bookshelf, and much more is on the way.

Some of the more extreme opponents have publicly indulged in amusing fantasies linking CSICOP to the KGB and the CIA, or to secret societies and "invisible colleges" said to be

mainly interested in disinformation and suppression of the truth. Less paranoid and more relevant are the criticisms voiced by those who suspect the Committee of excessive zeal in combating what it perceives as "pseudoscience" and of insufficient tolerance for the proponents of legitimately protoscientific research programs. Given the history of the paranormal debate, it would be unwise to dismiss such criticisms summarily. After all, quite a few skeptical feet show holes from bullets fired by skeptical hands. It would be presumptuous to maintain that a formal commitment to rational inquiry guarantees the absence of irrational sentiments. We all know those born-again disbelievers who confuse scientific investigation with reciting of anti-paranormal litanies, so there is ample room for self-criticism.

However, should the skeptics go as far as to plead guilty to such charges as are pressed by, say, Malcolm Dean in his *The Astrology Game*? That CSICOP is "a group of like-thinkers," engaged in an active campaign "to bring to the public the doctrine that there is no truth in astrology, psychics, UFOs and other fringe beliefs"; "self-appointed idea-killers" whose "closed-mindedness is a regression toward sixteenth-century inquisitorial activities" and in whose publications "dissent is nearly defined as heresy"?

It is unfortunate that so few of CSICOP's critics have availed themselves of the opportunity to put their views to the test by coming to Buffalo and seeing for themselves. Some leading proponents of parascience had for various reasons declined suggestions that they attend the Committee's first major conference. In a letter to the Council of the Parapsychological Association, a prominent psychical researcher had expressed the fear that his presence at the conference might be exploited for skeptical propaganda purposes. So he refused to go. Another parapsychologist, no less prominent, had written to me: "Yes, it would have been interesting to go to Buffalo for the CSICOP conference, as interesting perhaps as it was for Daniel to enter the lions' den!"

CSICOP Chairman Paul Kurtz, organizer of the conference

Actually, that analogy was appropriate. The most interesting feature of Daniel's adventure was that he found the lions more amiable than zoological prejudice would have led him to expect. A similar experience befell Robert L. Morris of Syracuse University, one of the few parapsychologists who were *not* afraid to enter the skeptics' den. Dr. Morris was not devoured. Instead, his thoughtful paper, defending the legitimacy of parapsychology and ending in a call for active cooperation between critic and researcher was greeted as an admirable and sophisticated contribution to the discussion. Dr. Morris proved an excellent ambassador of psychical research. Presumably, he had also set for himself the task of reconnoitering the unbelievers' camp. If he ever

Additions to the CSICOP Roster

We are pleased to announce that at a recent meeting of CSICOP's Executive Council, the following were elected Fellows of the Committee: Mario Bunge, professor of philosophy, McGill University, Foundations and Philosophy of Science Unit; F. H. C. Crick, biophysicist and co-winner of the 1962 Nobel Prize for Physiology or Medicine, now at the Salk Institute; Edwin C. Krupp, astronomer and director of the Griffith Observatory; David Morrison, professor of astronomy, University of Hawaii; and Thomas A. Sebeok, Chairman, Research Center for Language and Semiotic Studies, Indiana University.

The following were elected as CSICOP Scientific or Technical Consultants: Gary Bauslaugh, dean of technical and academic education and professor of chemistry, Malaspina College, Nanaimo, British Columbia; Barry L. Beyerstein, professor of psychology, Simon Fraser University, Burnaby, British Columbia; Clyde F. Herreid, professor of biology, State University of New York at Buffalo; I. W. Kelly, professor of psychology, University of Saskatchewan; and Joe Nickell, technical writing instructor, University of Kentucky, and paranormal phenomena researcher.

—Paul Kurtz
CSICOP Chairman

suspected CSICOP of being a monolithic block of implacably hostile critics, the Buffalo occasion will have convinced him that his suspicions were wrong. If anything, the conference has shown CSICOP to be a pluriform organization, encompassing a wide spectrum of opinions and attitudes, and more receptive to internal and external criticisms than its detractors typically assume.

Sure enough, the Committee has its unabashed hard-liners. (Nothing wrong with having a few hard-liners. Even *FATE* magazine will agree to this: Its reporter to the Buffalo conference happened to be the same person who wrote the hardest-line anti-paranormal article ever to grace the pages of CSICOP's journal.) An eloquent representative of the radical wing of skepticism, Mario Bunge of McGill University, Montreal, unceremoniously rejected parapsychology as a pseudoscience. Professor Bunge does not take kindly to those philosophies of science that wish to give psychical research the benefit of the doubt by labeling it a "protoscience": "There is always the fear that some golden nuggets may lie hidden in pseudoscience. . . . Such fear is quite justified in the beginning, particularly since an extremely original theory or technique—an unorthodoxy—may smack of pseudoscience just because of its novelty. But caution must be replaced with skepticism, and skepticism with denunciation, if the novelty fails to evolve into a full-fledged component of science at the end of half a century. . . . And no caution at all is called for even at the beginning if the new idea collides head-on with the scientific outlook, the scientific method, and the best established (yet of course fallible) scientific theories."

A drastically different viewpoint was put forward by Professor Bunge's

colleague Stephen Toulmin of the University of Chicago. In his witty and elegant paper, Professor Toulmin warned against the dangers of skeptical dogmatism. "We have to be continually aware of the risk that later changes in our theoretical ideas may force us to call some of our judgments into question. So the problem is that the line along which the distinction between the normal and the abnormal cuts itself has a long and complex history which must induce a certain modesty even about our skeptical doubts." Professor Toulmin reminded us that in the past important scientific findings have been rejected for precisely the same reasons radical skeptics cite today for rejecting unorthodox notions like "psi."

Some critics of the Committee later privately expressed the suspicion that non-CSICOP-member Toulmin (and also non-CSICOP-members Lee Ross and Daryl Bem, both of whom in brilliant talks had questioned some pet skeptical ideas) had been "used" by the organizers of the conference in order to make the Committee look more open-minded than it actually is. This suspicion to me seems hardly tenable in the light of the fact that, in Buffalo, several CSICOP-associated skeptics (the author of these reflections included) made exactly the same point that Professors Toulmin, Ross, and Bem have made, and in terms no less unambiguous than those employed by the "outsiders": There is a clear and constant danger that skepticism degenerates into sterile dogmatism.

This was also clearly the message contained in Paul Kurtz's introductory address "Debunking, Neutrality, and Skepticism in Science" (see p. 239). Professor Kurtz firmly rejected the ultraskeptical view that certain phenomena must be considered "impossible" on a priori grounds, antecedent to inquiry. He defended the practice of "debunking" demonstrably false or absurd claims but added that "there are dangers here: Sometimes what appears to be bunkum because it does not accord with the existing level of 'common sense' may turn out to be true. Mere prejudice and dogma may supplant inquiry. If one debunks, he had better command an arsenal of facts and marshal evidence to show *why* something is improbable or even downright false." Professor Kurtz appealed to his audience for an open-minded approach to the serious "parasciences," such as parapsychology and "some aspects of recent UFO and astrological research." "It would be presumptuous," he concluded, "to maintain that all intelligence and wisdom is on the side of the skeptic; for he may be as liable to error as the next person. Fortunately, we have critics who are only too willing to point that out—for which we should be grateful. We have made mistakes and have sought to correct them. We should not trust anyone to have all the truth, and this applies to ourselves as well."

In the light of such quotes, I venture to suggest, Malcolm Dean's description of CSICOP as a group of "self-appointed idea-killers" whose "closed-mindedness" is a regression toward sixteenth-century inquisitorial methods seems to contain an element of propagandistic hyperbole.

As an independent skeptic, who in the past has openly criticized nontrivial aspects of CSICOP policy, I gained the impression that the Buffalo conference marks the Committee's coming of age. After the vicissitudes of the early years the group has achieved, not perfection, but a certain equilibrium. No doubt, CSICOP will continue to be controversial and provoke criticism. That is the price it will have to pay for publicly questioning cherished beliefs. In the years to come, serious proponents of paranormal claims will have plenty of

reasons to disagree with the Committee or with individual members. However, after Buffalo '83, CSICOP has the right to demand of its critics that they adapt their rhetoric to reality; reality being that modern skepticism is a far more complex phenomenon than would fit Mr. Malcolm Dean's stereotype.

—Piet Hein Hoebens

Piet Hoebens is editorial writer for Holland's leading newspaper, De Telegraaf, *and a frequent writer on the paranormal.*

CRS's Psi Report: Plugging the Paranormal to Policymakers

WIDESPREAD PUBLICITY given a Congressional Research Service "report" on psi phenomena has created an impression that Congress may be about ready to hop on the pro-paranormal bandwagon.

In fact the report—it's actually a 35-page unpublished manuscript—is the work of one person, Christopher Dodge of CRS's Science Policy Research Division. Supposedly some unnamed member of Congress requested the study from the CRS. But Dodge has been involved in several efforts to stimulate interest in psi among policy-makers.

Dodge is a believer in paranormal claims. He has long-standing interests in spoon-bending and other momentous miracles. His report reflects these views. It is an unabashed promotion of things paranormal.

A look at this report makes one fear for the quality of advice Congress is getting on other subjects as well. It is naive, biased, one-sided, and misleading.

"Results of recent psi research suggest that some psi phenomena can be acquired and repeated fairly reliably, if less than ideally, under well designed and controlled conditions," it concludes. "This suggests to some critical observers that there may be an interconnectiveness of mind with mind and mind with matter."

It accepts the validity of psychic archaeology and dowsing, "which appear to incorporate both natural and paranormal aspects."

It then goes on to propose a litany of possible applications and implications of psi power: education and training, law-enforcement, location of lost objects, surveillance, the altering of "the basic functions of microelectronic elements" for good or ill, and so on. At the root is a pitch for more money, presumably taxpapers', to finance research into such wonders.

We've heard this all before, in the *National Enquirer* and in the publications of paranormalists. It's expected there.

But a report that can be taken—if mistakenly—as a serious pronouncement of a branch of the federal government should strive for a modicum of balance and perspective. In fact, the report ignores or discounts the predominant skeptical viewpoint of scientists

toward such claims. Based largely on a lengthy 1982 article by Princeton engineering dean Robert Jahn, who has been dabbling in the psi scene in the past few years, it lists some criticisms but discounts them in the next sentence: ". . . the quality of criticism of psi is often poor." This is followed by the implication that the real problem is with science: "Traditional scientific methodologies may need to be broadened."

A two-page bibliography of recommended readings in parapsychology lists not one skeptical book, even though important and up-to-date book-length critiques are readily available. Needless to say, nothing the SKEPTICAL INQUIRER has published on these subjects is mentioned.

Intellectually, the pretense that only minor methodological problems—rather than a massive credibility gap—separate psi from scientific acceptance and practical application is indefensible. To present such an embarrassingly biased and shoddy analysis as policy advice is a disservice to Congress and the taxpayer. We all deserve better.

—*Kendrick Frazier*

The Unicorn and the Media: I

MEDIA COMPLICITY in propagating and nurturing paranormal claims can be debated ad infinitum, but recent worldwide publicity given an alleged unicorn sighting provides a simple and decisive test case demanding a verdict of "guilty," at least in my city.

On Wednesday, November 9, 1983, the *Mansfield* (Ohio) *News Journal,* a newspaper with a daily circulation of almost 40,000, featured, at the top of page 2, an article boldly headlined "Hikers Report Seeing Unicorn." This article included two large, dramatic photographs and measured roughly 8½ × 11"—about 93 square inches or over one-third the entire page.

On Saturday, November 12, 1983, the same paper carried, at the bottom of page 12, as part of a "Digest" column of inconsequential national items (e.g., using heated sand to improve traction on ice) a retraction headed "Unicorn proves to be hoax." This article measured 2¼ × 4", or 9 square inches. No photographs.

Were we to quantify and assign values for "impact" to the various factors of attention involved in a newspaper article—page number, location on page, type size, use of photos, total area—on almost any scale, the pro-unicorn coverage outweighs the retraction by about 8 or 10 to 1. This objective fact is reflected in a poll I took in my classes; 16 students had seen the original article but only 2 (12½%) of the 16 had seen the retraction. Assuming the typicality of my students, the paper, and the area, and that most subscribers saw the original article, upwards of 35,000 people in north-central Ohio now carry some amorphous impression that there really are unicorns, and this impression never got canceled.

—*Tony Pasquarello*

Tony Pasquarello is in the Department of Philosophy, Ohio State University, Mansfield.

The Unicorn and the Media: II

FOR WHAT IT'S worth, the performance on the unicorn story was a little better in the *Washington Post,* the metropolitan newspaper closest to the site of the "sightings" in Virginia's Shenandoah National Park.

The *Post* gave its original story, " 'Unicorn' Photographed in Shenan-

doah Park," by staff writer Charles Fishman, a total of 91 square inches in its Nov. 8, 1983, edition. The story began with a 7½ × 4" space on the front page of the Metro section and continued on the inside. There were two photos: one of the "unicorn"—a side-view looking amazingly like a white horse with a manufactured horn attached to its head—and one of the two Washington, D.C., men, Steve Evans and Keith Hallam, who claimed to have seen and photographed the creature.

But when the hoax was disclosed, the *Post* gave the revelation even more space. Fishman's Nov. 12 article, " 'Unicorn' Was Product of Promoter's Imagination," with a smaller head "The Anatomy of a Hoax," totaled 114 square inches. It began with a 10" × 4" space at the top of the front page of the Metro section, and continued inside, with a photo of Hallam wearing the wooden horn and Evans holding the ragged blonde wig they had placed on a horse and photographed. The article quoted an Annapolis, Md., cabinetmaker who had carved the horn for the men and recounted Hallam's long interest in unicorns and his career as a promoter and entrepreneur selling, among other things, "Dallas dirt." The whole thing was a publicity gimmick for a book Hallam was trying to promote.

—*K.F.*

Hypnosis Memories Found Error-Prone and Pliable

TWO RECENT ISSUES of *Science* contained reports on tests of memory under the influence of hypnosis.

Jane Dywan and Kenneth Bowers authored "The Use of Hypnosis to Enhance Recall," in the October 14, 1983, issue (pp. 184-85). They showed their subjects 60 slides of line drawings for later recall. After a week, one group of subjects was hypnotized and asked for recall; the other group was not hypnotized. The authors found that the hypnotized subjects gave more responses but that they had a greater percentage of errors than the nonhypnotized subjects. Dywan and Bowers concluded that hypnotized subjects show a more relaxed criterion of judgment than nonhypnotized subjects, which causes them naturally to recall more weak memories but also to make more intrusion errors.

The second study was reported by Jean-Roch Laurence and Campbell Perry, "Hypnotically Created Memory Among Highly Hypnotized Subjects" (*Science,* November 4, pp. 523-24). The researchers hypnotized subjects and asked them to relive the events of one of the nights of the previous week. Then the subjects were asked if some loud noises had awakened them (this was after it was determined that this *did not* happen on the night in question). Of the 27 subjects, 17 reported that they were awakened by noises, and they described them in detail. Subsequent to the hypnosis, 13 of the subjects reported that the memory was real and they maintained this belief even when told it may have been suggested while they were under hypnosis.

These studies demonstrate that memory, rather than being a literal record of personal experience, is very labile, especially under the state of hypnosis. I believe there are three lessons to be derived here. First, the courts are wise to exclude "eyewitness" testimony from witnesses who have been hypnotized. Second, we can challenge belief in reincarnation with a more parsimonious explanation for the purported ability of some hypnotized subjects to

relate tales of prior lives. Third, if we accept the possibility of auto-hypnosis, we can offer alternative explanations to claims of UFO abductees and those who report out-of-body experiences.

—*Joseph G. Dlhopolsky*

Dr. Dlhopolsky is assistant professor of experimental psychology at St. John's University, Staten Island, N.Y.

'Psychic' Rita Burns Burned in Court Suit

SELF-STYLED PSYCHIC Rita Burns of Toronto, Canada (see *SI*, (Spring/Summer 1978: 15-16), who filed a $7-million suit against multimillionaire Peter Pocklington, was told at the close of the October 1983 trial by the Ontario Supreme Court to pay Pocklington's $25,000 legal and court costs. Burns had claimed she gave the millionaire valuable psychic advice on investments and sued for 10 percent of his profits.

Pocklington said her advice was of no use to him whatsoever, and he refused to be "blackmailed" by Burns. The slim, blonde, 33-year-old "psychic" was apparently not able to foresee that she would lose the case.

James Randi, CSICOP investigator, was called into consultation early in the case by Pocklington's legal representatives, and he strongly advised them not to settle out of court.

During the trial, Pocklington's lawyer asked Burns if there was any way to verify whether she actually had her "professed ability." Rita replied that she only claimed to be "perceptive, fairly articulate, and extremely good-tempered." "Holding on to a rock and claiming to see a bunch of cavemen sounds to me to be a professed ability," said the lawyer. He was referring to claims Burns had made about "helping archaeologists"—claims refuted by the Royal Ontario Museum officials.

Said Pocklington of the verdict, "It shows that I stand up for what I believe in." It remains to be seen whether his belief in paranormal powers, which he has expressed in the past, will be tempered by this experience.

On the Road with CUFOS: Dubious Photos in Exhibit

THE SEATTLE metropolitan area recently experienced a close encounter of the photographic kind. The Center for UFO Studies (CUFOS) had its traveling photo exhibit on display at one of the area shopping malls. The array of UFO photographs and pictures attracted only mild attention. Despite favorable coverage by a local television station the four-day photographic exhibit remained a nonevent. On hand from the "Center" was John P. Timmerman, a UFO promoter, chairman of CUFOS, and close associate of J. Allen Hynek. Although CUFOS received support from some local flying saucer buffs the promotion seemed to lack life.

Prominent among the photos on display were two of the Rex Heflin photographs taken in August 1965. At the time these photos were released the press called them a hoax. The Air Force's Project Blue Book investigators

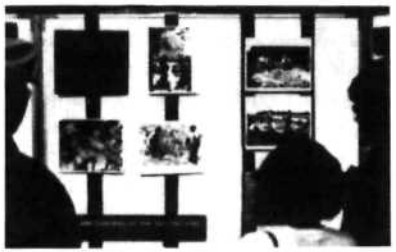
Timmerman with CUFOS exhibit.

came to the same conclusion. Ground Saucer Watch (GSW), a pro-UFO organization, performed a computer enhancement of the Heflin photos that revealed a "vertical linear structure" above the UFO. GSW concluded that the Heflin photos were of a small model flying saucer supported by a thread and just a few feet from the camera.

Another famous photo exhibited by CUFOS was the Trindade Island UFO pictures. Taken in 1958 by Almiro Barauna, the photos never have been conclusively proved to be fakes. However, the late Donald H. Menzel, a Harvard astronomer, said that they "were almost certainly a hoax" and a review of the events pointed out how Barauna, a professional marine photographer, could have faked the photos. Menzel and a collaborator, Lyle G. Boyd, discovered important inconsistencies between the story behind the photo and verifiable data. Menzel and Boyd revealed that Barauna had a prior interest in UFOs and even had written an article about them in which he included admittedly faked flying saucer photos.

Also featured as a part of the CUFOS exhibit were descriptions and photos of two alleged "landings" of flying saucers: one at Socorro, New Mexico (1964), and the other at Delphos, Kansas (1971). Although Hynek endorsed both of these cases when they occurred, subsequent investigation, particularly by Philip Klass, has demonstrated that both of these cases are surely hoaxes.

I asked Timmerman how he justified using such cases and photos as those mentioned above. He replied, in part, that although there are some who do not believe these cases are "valid unknowns" there were *many*, "including highly regarded students of the UFO phenomenon, who regard them as unexplained."



Socorro, N.M., case display.

The preponderance of sensational close encounter cases in the CUFOS exhibit is another indication of the intellectual bankruptcy of UFOlogy. Perhaps more significant is the brazen use of fake or highly questionable photographs by a supposedly scientific organization.

—*Michael R. Dennett*

Michael Dennett is chairman of the Northwest Skeptics.

Fast-Talking 'Psychic' Fails Test in St. Louis

In November 1982, I first heard from Lynn Gladhill, of "L. L. Gladhill & Associates" in St. Louis, Missouri. Advertising herself as an astrologer and psychic with much regular radio and TV exposure and a startling track record, Ms. Gladhill eagerly sought to meet my $10,000 challenge, though she nobly refused the money and preferred my validation instead. After much to-and-fro bargaining, the big test was arranged by radio station KMOX in St. Louis.

It was not possible for me to attend in person, so I appointed Dr. Armand Brodeur, a well-known physician, to act as my proxy. The test consisted of having Lynn give ten facts about each of five persons, after contacting them by phone only. But these persons were not

to hear the "readings" given. Instead, after they had been "read" they were to be given all five different readings, and asked to sort them out according to aptness of fit. Since Lynn claimed to be highly accurate at this sort of work—though she said she had never done it this way before—and predicted at least a three-in-five success rate, I felt it would do as a preliminary attempt to discover whether or not she seemed to have any powers that might be looked into further.

The test was set for May 2, 1983. Five subjects were selected at random by KMOX from applicants, and show host Jim White concealed them at the station near telephones. One by one, they called the studio and said, "Hello, Lynn. Tell me something about myself." (This was exactly what Gladhill had required of them, according to her own statement.) Then the phone was hung up, and Lynn prepared a list of ten facts she had divined psychically. When the five persons were asked to identify their correct readings from the group of five, *one* was successful. Since the chances of success were one-in-five, it was exactly what would be expected if Lynn Gladhill had exhibited no psychic powers at all.

You should be aware that, of four tests suggested by Lynn herself, this was the one she labeled as her "first priority choice." Her language in her acceptance of my challenge was a prize example of verbal soft-shoe. Example:

> My primary reason behind my efforts in proving my claims to a modicum of what I refer to as sensitivity (to avoid the usual plethora of esoteric jargon and the semantic pratfalls that usually ensue with it) is not to render some overall blanket endorsement of all aspects of the realm of metaphysics . . . [etc., etc.]

Lynn Gladhill had agreed, in advance, that the conditions were satisfactory for the tests. I had told her that she had to be absolutely sure that all was ideal for her purposes before beginning. I also told her, "I will only conduct a test using what you consider to be your most powerful and successful procedure." She herself chose the system we used. However, upon the termination of the KMOX text, Dr. Brodeur told me that "the first thing she did was to claim 'foul.' "

After the test was concluded, Lynn insisted on facing the subjects and trying to talk each one into accepting her reading. On subject "C" she scored ten misses out of ten. On the last of these "facts," she had given the subject *three* first names and *seven* last names of persons she said were "closely related" to her! With another subject, she had given three first names of "an acquaintance" and suggested "knowledge of persons" with names beginning with two different letters of the alphabet, and yet she scored zero. She provided names like Jim, John, Robert, Mark, and Michael—so she had a hard time missing, but she managed it.

Incredibly enough, this "psychic" felt that her performance had not been the colossal failure that it was. She said, on the air, "Well, Randi, since I didn't even *see* these people at all, but only spoke to them by telephone, one in five isn't all that bad!" But this "telephone reading" is *exactly* what Lynn Gladhill does *daily* on her own radio show!

Following this test, Lynn announced that she would "never come back and do this again because the test was unfair." Show host Jim White opined at this point that she was "trying to chicken out." Later, said Dr. Brodeur, she decided that maybe she'd quit the business altogether.

Don't count on it. Lynn Gladhill is never going to quit the business. That's my prediction for this year.

(I would like to sincerely thank

host Jim White and Dr. Armand Brodeur for their diligent attention to detail and fair conduct of this test for radio station KMOX.)

—James Randi

Colorado Group Formed

THE COLORADO Organization for a Rational Alternative to Pseudoscience (CO-RAP) has been formed in Boulder. Its objective is to advocate and demonstrate the use of scientific inquiry into any activity that claims to be scientific or that presents itself as an alternative to science, and to provide a forum for discussion and dissemination of information. Members come from the Denver-Boulder area. For further information write to Béla Sheiber, Director, CO-RAP, Box 7277, Boulder, CO 80306.

—K.F.

In Brief

PHILOSOPHER AND CSICOP Fellow Sidney Hook has received the government's highest award for achievement in the humanities from the National Endowment for the Humanities. Hook, senior fellow at the Hoover Institution at Stanford University, will receive $10,000 and deliver the 1984 Jefferson Lecture in the Humanities. The lecture was established to recognize the combination of intellectual and civic virtues exemplified by Thomas Jefferson and to provide an opportunity to explore matters of broad concern.

* * * * *

Audio tape cassettes of all sessions of the CSICOP international conference on "Science, Skepticism, and the Paranormal," Oct. 28-29, 1983, at the State University of New York at Buffalo, are available from: Liberty Audio, 824 West Broad St., Richmond, VA 23220. There were seven sessions in the meeting, and the cost is $8 per session (two cassettes each) or $44 for the entire set of seven sessions, plus 10 percent for shipping and handling.

—K.F.

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MARTIN GARDNER

Notes of a Psi-Watcher

MacLaine, McTaggart, and McPherson

JOHN McTAGGART ELLIS McTAGGART, who died in 1925, was one of Cambridge University's great eccentrics. He claimed to be a follower of Hegel, though other Hegelians considered him a renegade. In his peculiar philosophy, space, time, and matter are all illusions arising from our "misperception" of reality. The only real world is a community of selves, each undergoing endless reincarnations. Although time is unreal, history had a beginning and will end when all souls are united by love in a timeless perfect state.

For McTaggart, Hegel's Absolute is the totality of all selves, but with no more selfhood of its own than London. McTaggart was almost alone among Western philosophers in combining atheism with a belief in the survival and preexistence of the soul. Bertrand Russell wrote that, during his student days at Cambridge, he and McTaggart were "intimate friends" until Russell, in a "rash moment," read Hegel and discovered that his works were "little better than puns." The breakfasts at McTaggart's bachelor lodgings, to which his favorite students were invited, were famous, Russell recalled, for their "lack of food." Students took to bringing their own eggs. When Russell decided that stars really existed even when no one was aware of them, McTaggart "asked me no longer to come and see him because he could not bear my opinions. He followed this up by taking a leading part in having me turned out of my lectureship."

In H. G. Wells's novel *The New Machiavelli,* McTaggart appears as "dear old Codger . . . as curious and adorable as a good Netsuké . . . his round innocent eyes, his absurdly nonprehensile fat hand carrying his cap, his grey trousers braced up much too high, his feet a trifle inturned, and going across the great court with a queer tripping pace . . . it was a wonderful web he spun out of that queer big active childish brain that had never loved nor hated nor grieved nor feared nor passionately loved—a web of iridescent threads . . . as flimsy and irrelevant and clever and beautiful . . . as a dew-wet spider's web slung in the morning sunshine across the black mouth of a gun."

Here are J. B. Priestley's memories:

> While listening to him I could not find a flaw in his lucid and highly ingenious arguments, but never believed anything he had told me once I was out of his presence. . . . He had a curious high voice, a large moon-baby face with spectacles on the end of its nose. . . . Some odd disability gave him a crablike walk, and one met him coming sideways around buildings, like a sheriff about to shoot it out with the bad men in a

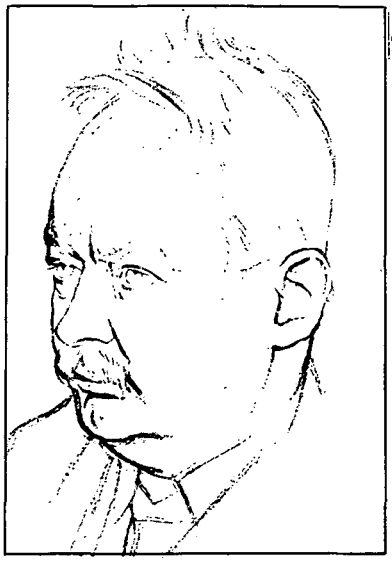
> Western. . . . He believed in human immortality, was a staunch supporter of the Church of England, and, having cheerfully argued God out of the universe, he was an atheist.

Although McTaggart has been totally forgotten by today's thinkers, his views were once so influential that the Cambridge philosopher C. D. Broad devoted two volumes (1,250 pages!) to refuting McTaggart's metaphysics. McTaggart, said Broad, had not a single disciple. That is—until 1983.

My mind did a double-take when I encountered his name on page 219 of Shirley MacLaine's new and third best-seller, *Out on a Limb.* (Her first book, *Don't Fall Off the Mountain,* told of her travels abroad and her early life in Hollywood; her second book, *You Can't Get There from Here,* was about the making of her documentary film on China.) Somehow, in her voracious reading about reincarnation, Shirley discovered McTaggart. She quotes a long passage from his book *Human Immortality and Preexistence* and calls him the greatest of this century's philosophers who believed in reincarnation.

Miss MacLaine's citations of other famous believers are curious. They include names of many who had no interest in reincarnation in the sense of cycles of lives on earth—Aristotle, Kant, Carlyle, Milton, Benjamin Franklin, to name a few. Conspicuously absent are such philosophers as F. C. S. Schiller and C. J. Ducasse, and the poet William Butler Yeats, who really did believe. John Dewey, a hard-nosed secular humanist and foe of all metaphysics, would have been dumfounded to find himself listed among those great minds who "deeply believed in metaphysical dimensions that would ultimately explain the mystery of life."

Shirley is impressed by spiritualist mediums of the past, and by such contemporary miracle workers as Sai Baba, an Indian conjuror who specializes in "materializing" jewelry and ash in his closed fist. She saw a lama in the lotus position levitate three feet. Her far-out American guru—she calls him David[1]—persuaded her that Jesus, like Moses and Buddha, was a superpsychic and that he actually rose from the dead. The Shroud of Turin was produced, Shirley is convinced, by the fantastic spiritual energy of his corpse. Before Jesus began his ministry he studied yoga in India and Tibet—an old occult claim that Shirley takes with great seriousness. Why are there no references in the Bible to Jesus' teachings about reincarnation? Because, we are informed, all such passages were expunged by the Council of Nicaea to protect the power of the Roman church. Jesus' rejection of the notion that a man born blind was being punished for a previous sin (John 9:1-3) is never mentioned. McTaggart, by the way, had a low opinion of Jesus. "If one was a Christian," he wrote, "one would have to



Steam and Sons

John McTaggart Ellis McTaggart

worship Jesus and I don't like him very much. . . . Would you like a man or a girl who really imitated Christ?"

Flying saucers, according to Miss MacLaine, are from outer space, perhaps propelled by "thought energy," which is much faster than light. Shirley believes the aliens are anxious to help us and have visited the earth many times in the past, as recorded in the Old Testament and established by the works of Erich von Däniken. In Peru with David, he tells her how he learned all his secret wisdom from Mayan, a beautiful young woman who came here from a planet in the Pleiades. She asked David to pass this wisdom on to Shirley. When Johnny Carson, on his "Tonight Show" (September 7, 1983), wondered why the aliens have never contacted our government, Shirley responded like a true UFO buff. The aliens probably have, she said, but our government is concealing this to prevent panic.

Miss MacLaine's budding interest in reincarnation came to full flower when she began to converse with discarnates on the "astral plane," a theosophical term for the place where souls live between incarnations. These entities—one was a former Irish pickpocket named Tom McPherson—spoke to Shirley through the mouths of trance mediums. She learned many surprising things. At the moment of the Big Bang, she and David had been created "soul mates." In a more recent incarnation, she had been married to Gerry.

Gerry is the name Shirley gives to an ambitious married member of British Parliament with whom she, at the time of her visits to the mediums, was having a passionate and secret love affair. Shirley describes him as a socialist who wants to become prime minister. He has an unruly shock of hair, a tendency to stumble over furniture and confuse closet doors with exits, and a little finger with a missing upper joint. But Shirley admits she put in many false clues designed to conceal Gerry's identity. There have been numerous guesses in the British press: Olof Palme, the Swedish prime minister? Andrew Peacock, the Australian conservative? Shirley isn't blabbing. At one press conference she said, "I guarantee you Gerry is not Margaret Thatcher." According to *People* magazine (July 18, 1983), a voice from the rear shouted, "That's one down!" "If I'd balled as many politicians over the world," she added, "as you guys say I have, I'd be inside a bottle in the U.N."

Shirley probably doesn't know it, but by one of those unusual coincidences that she likes to call "synchronicity," Wells's *New Machiavelli* is the story of a British socialist leader who falls in love with a woman not his wife. Like Gerry, he cannot divorce his wife without wrecking his political career. Unlike Gerry, he finally chooses to wreck it. A spirit speaking through a California medium tells Shirley that her former marriage to Gerry had been even stormier. Why? Because of his excessive devotion to "important work involving cultural exchanges with extraterrestrials."

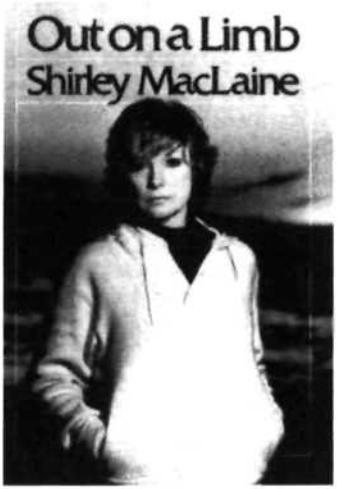
Miss MacLaine's book swarms with fashionable paranormal notions: energy vibrations (of which love is the highest), other dimensions, precognition, out-of-body travel, déjà vu (a proof of past lives), karma, ESP, the Aquarian Age, Atlantis (where Shirley thinks she once lived), Lemuria, and the wonders of the Great Pyramid of Egypt, which she mistakenly thinks is on our dollar bills. David teaches her that the atom is a miniature solar system, apparently having never learned that this primitive model of the atom was long ago abandoned. She is a great admirer of Edgar Cayce, the American trance psychic whose name peppers her

pages. Discarnates who reveal to Shirley the details of her past lives—she calls it "trance channeling"—get their information from the Akashik Records, another theosophical concept. These are archives on which are stored the vibrations of every event and thought that has occurred since the creation of the universe.

Shirley repeats all the ancient arguments for reincarnation: its vast sweep and beauty, its simple explanation of irrational evil, the fact that more people around the world believe in it than don't. Little is said about researchers who claim to have found persons who recall past lives under hypnosis, perhaps because Shirley knows how shaky this evidence is. She mentions none of the doctrine's negative aspects. When reincarnation is coupled with karma, for example, it is not easy to feel compassion for those who experience great suffering through no fault of their own. Are they not being justly punished for sins in previous lives? This abominable view still strengthens the contempt that higher castes in India feel for the untouchables, and the great respect they pay the rich and powerful.

The Judaic-Christian-Muslim view of an afterlife at least offers escape from an endless round of lives on earth. "It is no more transcendental," wrote Gilbert Chesterton (in *Everlasting Man*), "for a man to remember what he did in Babylon before he was born than to remember what he did in Brixton before he had a knock on the head . . . reincarnation as such does not necessarily escape from the wheel of destiny; in some sense it is the wheel of destiny."

Today, when educated young people throughout the East are abandoning belief in reincarnation, it is astonishing how faddish it has become in certain circles of the West. Even more surprising is how the doctrine can cause an intelligent, beautiful, talented woman



to write page after page of kindergarten metaphysics that read like reports in one of those shabby little spiritualist journals that flourished around the turn of the century when the upper classes amused themselves with table tipping.

Although Shirley never mentions a single book by a skeptic, she is honest enough to record conversations with three good friends who were profoundly shocked by her new faith. Bella Abzug was polite but dismayed. A New York City writer who for a time had been Shirley's lover ("his quirky brilliance had been a major factor in keeping me interested in him for quite a number of years") reminded her of how gullible she had once been about modern China. Her occult enthusiasms, he told her, were even more preposterous.

It was Shirley's burly labor leader, as down to earth as David is floating high, who said it all during a remarkable argument about reincarnation and trance mediums that they had in Stockholm before their relationship ended:

> He shook his head. "I don't know what to say," he muttered. "I mean, you just

can't be serious about this."

"Why not?"

"Well, my God, isn't it obvious? These mediums are psychos, or weird, dragging stuff up out of their own unconscious. Or else they're taking you. You surely don't believe they're actually communicating with *spirits?*"

"*They* aren't communicating. They're just channeling—they don't even remember what's been said."

"Whatever they're doing, it's utter rubbish. They do it for money, exploiting gullible people who want to be told some sugary nonsense about dead relatives or some other damned thing."

"Edgar Cayce took no money, the advice he gave was sound, and it didn't come from his unconscious because he had no medical training."

Gerry looked at me helplessly. "Why in the name of God do you have to get involved with this sort of thing?" he asked desperately.

Note

1. In an interview (*Philadelphia Inquirer,* June 15, 1983, reprinted in *Fate,* December 1983) Miss MacLaine revealed that David is a composite of "four spiritual men" who had educated her. All four, she claimed, had relationships with extraterrestrials who came to earth from the vicinity of the Pleiades star cluster •

More Tragic Than Merely Amusing

Many people probably regard the debunking of occult and paranormal claims as a marginal exercise—even while they must admit that most people encounter planets more often in horoscopes than in planetariums or (wonder of wonders) in the sky itself. I would cite two reasons for regarding the failure of critical faculties and the decision to accept improbable hope as rather more tragic than merely amusing.

First, lives are short and resources generally slim. It may be their own fault, but what do people say when they wake up twenty years and a half a career later to acknowledge that they have wasted their time on a chimera nurtured by fraud? And what of people who invest their deepest hopes (and much of their hard cash) on harebrained schemes for spiritual enlightenment or continuity (the wisdom of psychic forces or little green folks in UFOs, or direct information from Uncle George in the beyond)?

Moreover, the density of fraud and nonsense in parapsychology drives critical discerning scientists away from a subject that may display chinks of enormous promise . . . Who wants to invest precious years of a career in an area so rife with fakery not easily detected by the ordinary methods of science? . . . Thus, ironically, the fools and frauds are keeping their own ship from a potential port. . . . There may be a physics of rare skills, but how can we discern it amid the quackery?

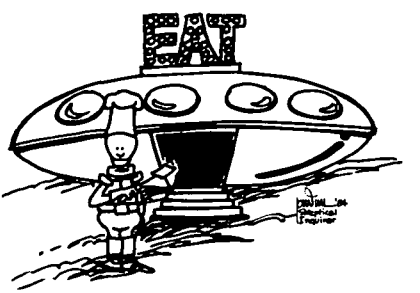
Second, as we discern a fine line between crank and genius, so also (and unfortunately) must we acknowledge an equally graded trajectory from crank to demagogue. When people learn no tools of judgment and merely follow their hopes, the seeds of political manipulation are sown.

—Stephen Jay Gould, "The Quack Detector," *New York Review of Books,* February 4, 1982.

ROBERT SHEAFFER

Psychic Vibrations

THE *APRO BULLETIN*, published by the Aerial Phenomena Research Organization, the longest-surviving UFO group in the United States, claims to have discovered what it terms a "new wrinkle in [UFO] abduction cases": UFOs disguised as hamburger stands. It published an account (December 1982), by a woman identified only as Mrs. R, of an incident that occurred in 1953 or 1954 on U.S. Highway 97, southeast of Crater Lake, Oregon. Coming around a bend in the road, the nine members of her family reportedly saw a big, round-shaped café, all lit up. As they approached the café, the car engine reportedly sputtered and stopped, as is supposed to happen in the vicinity of a UFO. Entering the café, they found the circular inside extremely brightly lit, and the tables were made of a transparent substance like plexiglass. The *people* in the restaurant (italics supplied by APRO) were all blonde and about four and a half feet tall, wearing silver uniforms and boots. The food served by the extraterrestrials must have been particularly bland, because no mention is made of it. The family paid their bill and went out to their car, which would not start but nonetheless "coasted" out to the highway. Soon, it started all by itself. After driving several miles, one member of the family remembered that



she had left her purse at the strange café. They drove back to where it had been, but were unable to find it. Local residents, asked about it, denied all knowledge of such a place. Most amazing to Mrs. R was that when they arrived in the next town, she discovered that her purse contained exactly as much money as it did before stopping at the café, despite paying the tab. (Did the extraterrestial waitress appreciate the tip in earth currency?) Mrs. R now says she is sure that she and her family were in a UFO. APRO comments that "a considerable amount of investigation is ahead for us on this case."

* * * * *

Some ads from a recent single issue of *Common Ground*, a "New Age" publication from the San Francisco Bay region, always in the vanguard of the

weird:

• "SPECTRO-CHROME: A Radiant Color Healing System . . . each color has been thoroughly researched and proven to alleviate specific imbalances according to that color's inherent properties."

• "SPINOLOGY: Certified Spinologists work on the bones of the spine to free the spinal chord from any bony obtrusion."

• "DENTAL CARE: A Holistic Approach."

• "HEALTH BEGINS IN THE COLON! . . . Colon therapy is a time-proven adjunct to any health, weight loss, or fasting program . . . The buildup of wastes in the colon affects the whole body by interfering with proper absorption of nutrients into the blood stream."

• "SPECTRUM CHIROPRACTIC & WHOLISTIC THERAPY CENTER . . . specific effective Chiropractic care for an overall postural balance and restoration of nerve function; 'Transmuted Shiatsu Therapy,' organ and energy balancing."

• "WHY SHOULD YOU GET YOUR CHART DONE AGAIN? You'd get a second opinion on surgery, so it's smart to get one on your life. Astrologers vary in qualifications . . . a yearly update is as important as a yearly physical."

• "HOLISTIC HYPNOSIS . . . self-hypnosis, memory, self-image/confidence/esteem/exploration, negative imprint clearing/discharge (recommended), dreams, optimum performance, self control, weight, E.S.P."

• "THE KUNDALINI CLINIC—For the Assessment and Counseling of Disturbing Paranormal Experiences."

• "An Invitation from the SUPREME BEING. . . . This letter is an invitation to live with me. I am the Supreme Being, the sole source of everything and everyone that ever was or will be. My name is Barry Tellman. This is my first, only, and last incarnation on the earth . . . I am currently residing in the San Francisco Bay area with a growing community of perfect masters . . . I invite you to participate in *The Genesis Experience* (tm)—a full-day one-to-one celebration of friendship and honesty with a perfect master. A one thousand dollar ante is presently required of each participant which neither guarantees nor entitles one to receive anything in return."

* * * * *

New developments on the creationist front: The Institute for Creation Research (ICR) reports: "We are especially thankful that our Ararat team has returned safely, even though the Ark on Ararat still remains hidden." Alas. The Ark's ability to evade its pursuers is especially remarkable in light of the comments made by Dr. John D. Morris, leader of the ICR's expedition, that "conditions seemed optimum for a discovery." A different expedition even made four circuits of Mt. Ararat in an aircraft at elevations of 11,000, 12,000, 13,000, and 14,000 feet, yet saw nothing at all. Even Dr. Morris admits to doubting the Ark is there—but only for a moment. "The obvious thought has now crossed each explorer's mind—perhaps the remains of the Ark are not really on the mountain at all. Yet the overwhelming evidence remains. Something must be up there."

Meanwhile, the Bible-Science Association explains in its *Bible-Science Newsletter* the creationist version of continental drift, which might be more properly termed a gallop. "Minor continental division is the cause of the draining of the land mass when God caused the oceans to retreat after 150 days of the Noahic flood," according to Dr. Bernard Northrop, a creationist geologist. Continental movement continued for 500 to 1,000 years afterward, says he, which "produced the great

Atlantic basin. I have pointed out previously that there are no Noahic flood deposits in the Atlantic basin. The reason for this, of course, is because the Atlantic Ocean is the magma trail left by these moving continental plates after the Flood." The Bible-Science Association also announced that it has deleted from its catalogue of creationist tapes for sale a talk by Dr. Gerardus Bouw titled *Astrophysical Evidence for Geocentricity.* No reason is given for its removal.

* * * * *

Walt Andrus, director of MUFON, the UFO group that "keeps the crackpots out" (*SI,* Fall 1983, p. 20), is the source of the most recent rumor of an impending end to the supposed "government UFO coverup." Writing in the July 1983 *MUFON UFO Journal,* Andrus states: "I am predicting that the forthcoming book titled *Clear Intent,* authored by Larry Fawcett and Barry J. Greenwood and scheduled for release by Prentice-Hall during the spring of 1984, will be the vehicle that will force the Pentagon and our government intelligence agencies to reveal why they have conducted a 'Cosmic Watergate' or coverup with respect to their involvement with UFOs. . . . Reliable sources have informed us that the Pentagon will release a film this fall to the Public Broadcasting System (PBS) explaining their role and endeavoring to justify the basic reasons for the intelligence agencies' coverup."

UFO skeptic Philip J. Klass is offering 100-to-1 odds that neither prediction will come true, but thus far has had no takers. Andrus joins a long and distinguished line of predictors of a forthcoming "end to the UFO secrecy," among them:

• "Before the year is out, the Government—perhaps the President—is expected to make what are described as 'unsettling disclosures' about UFOs"—*U.S. News & World Report,* April 18, 1977.

• "Aliens . . . will begin transmitting their secrets to us no later than August, 1977"—Jeane Dixon, 1976.

• "We predict that by 1975 the government will release definite proof that extraterrestrials are watching us."—Ralph and Judy Blum, 1974.

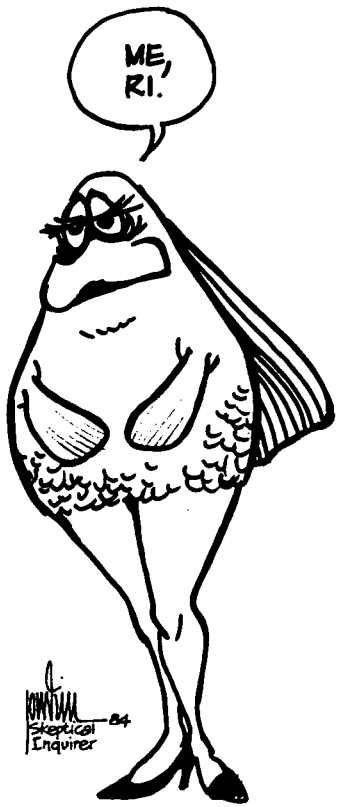
• "The time is getting near when the U.S. Air Force will have to end its longstanding tactic of concealment."—Syndicated columnist Roscoe Drummond, 1974.

• "FLYING SAUCERS—THE REAL STORY: U.S. BUILT FIRST ONE IN 1942. Jet-propelled disks can outfly other planes . . . By choosing which [jet] nozzles to turn on or off and the angle of tilt, the pilot could make the saucer rise or descend vertically, hover, or fly straight ahead, or make sharp turns . . . a big advance in the science of flying."—News "scoop" in *U.S. News & World Report,* April 7, 1950.

* * * * *

Not all monster-chasers accept the alleged sightings of the *ri,* described as mermaids and mermen by the natives of Papua New Guinea. Collected by Dr. Roy Wagner, University of Virginia anthropologist (see Psychic Vibrations column, *SI,* Winter 1983-84, p. 21), these accounts were published by the International Society of Cryptozoology (ISC) in its journal *Cryptozoology.* Last summer two cryptozoological organizations sent investigators to the island of New Ireland off the coast of Papua New Guinea to look for *ri.* One group was the ISC, the other was Jon Beckjord's National Cryptozoological Society (NCS), founded *after* the other organization. Beckjord is an indefatigable investigator of Bigfoot and other supposed monsters.

Beckjord reported that he spent two weeks in the Ramat Bay area, which the *ri* are said to frequent. Despite hours of observation, including nocturnal vigils with a night-vision device, he saw no mermaids. Worse yet, he found that while some of the natives use the term *ri* to mean "mermaid," in other villages it means "dugong," or sea cow. Beckjord concluded that there were no mermaids in New Guinea, or at least no *physical* ones. He says he does now think, however, that some of the mermaids reportedly sighted may be paranormal rather than physical, thereby enabling them to play peekaboo with the world of science.



Thus Beckjord, who believes that Bigfoot is paranormal in nature and who has often criticized the ISC for being closed to such "heretical" ideas, is skeptical of the mermaid reports in New Guinea. The ISC, however, which is composed mainly of scientists and which has long been trying to distance itself from nonacademic monster enthusiasts like Beckjord, fearing its scientific credibility will be compromised, believes that native accounts of mermaids in New Guinea represent a great cryptodiscovery. •

The Debunker's Cross

All enlightened debunkers must bear this cross: to be ever open to honest nuttiness while ruthlessly exposing the frauds, yet to be accused by all opponents (however falsely) of being the pawn for an oppressive establishment trying to hide tumultuous truths from a thirsting public.

—Stephen Jay Gould, "The Quack Detector," *New York Review of Books,* February 4, 1982.

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SPECIAL REPORT

The State of Belief in the Paranormal Worldwide

At a banquet session of the CSICOP conference on "Science, Skepticism, and the Paranormal," October 28-29 in Buffalo, representatives from six countries gave appraisals of the status of belief in the paranormal in their areas of the world. We present here slightly condensed versions of those talks.—ED.

Mexico: Old Rural Ghosts and New Urban Irrationalities

Mario Mendez-Acosta

IN MEXICO, ancient customs, styles of life, and everyday activities coexist with totally modern habits and forms of existence. In every culture—modern and ancient—belief in some sorts of paranormal phenomena is an important ingredient of daily life. The old Indo-American peoples of Mexico are no exception. Their beliefs survive up to this time. Their most notorious ghosts are now the ghosts of the modern Mexico—for instance, *La Llorona,* the crying woman, a street ghost of old Mexico City. Their werewolves (werecoyotes or weretigers) are now Mexico's modern werebeasts and are nightly terrors in many rural areas. (This concept is known as the *nahual* and is associated mostly with the totem-related customs of each tribe and culture.) In many regions, the belief in influential and fearsome local gods still persists alongside magical convictions, from the picturesque to the hair-raising.

However, the rationalism brought about by education and occidental civilization did not have time to make all these old beliefs fade away before new irrationalities, imported mainly from the United States, made their appearance in the twentieth century, especially during the past two decades. The new urban irrationalities—religious sects, pseudoscience, and modern charlatanry—are now

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spreading all over the country.

The degree of penetration of these new doctrines is rather disturbing. They affect all sectors of Mexican society. The first wave arrived at the beginning of this century, led by the Theosophist movement and by the spiritism of Allen Kardek's school. With it arrived vegetarianism, naturism, and homeopathy. At this moment, there are two official schools of homeopathic medicine in Mexico (one of them within the otherwise prestigious National Polytechnical Institute). There is one homeopathic public hospital in Mexico City and thousands of homeopathic pharmacies all over the country.

In addition to what has been published by the Mexican section of CSICOP, so far as I know there has not been any other critical analysis of this situation. Not even in ordinary medical journals has there ever appeared a study about even the most preposterous claims made by homeopathic theory. (When ordinary physicians participate in panel discussions about homeopathy on TV and radio, they plainly show they don't really understand what it is all about; sometimes they misjudge it as some kind of herbal medicine, which may at least have some logical basis.)

Spiritism had its great moment in the first two decades of this century, but Mexico had its counterpart of Harry Houdini in the person of Carlos de Heredia, a Jesuit priest, author of a classic of debunking, *The Spiritist Frauds.* In it he describes in detail all the tricks then used by mediums to fleece the gullible. He visited the United States on several occasions and published, in English, *Spiritism and Common Sense.* He debated with Conan Doyle and contributed to the unmasking and final confession of Nino Peccaro, a noted psychic of that time. Father Heredia managed to duplicate some psychical phenomena and became an excellent stage magician. In order to pull Conan Doyle's leg, he wrote *The Spiritistic Adventures of Sherlock Holmes,* in which the great detective solves some cases involving spiritist frauds. (I am sure this book would delight Martin Gardner.)

It was not until the late fifties and sixties that the strongest wave of modern paranormal fads and doctrines hit Mexico and the rest of the world. Belief in UFOs and their extraterrestrial origin is exploited by several groups and individuals that publish three or four national magazines and include a semireligious group that is allegedly in continuous contact with extraterrestrials. These aliens supposedly furnish valuable information concerning advanced techniques in meditation, but unfortunately no technological information whatsoever.

The most important advocate of UFOmania in Mexico is Pedro Ferriz, a widely known TV commentator and anchor man who was named manager of Channel 13, the official TV network, and of the government's news agency, Notimex. Ferriz took advantage of the means and facilities of both organizations to indulge his particular beliefs. He presented a documentary film about the so-called UFO of the Pleiades, widely recognized as a fraud. In a public presentation in Mexico City, he treated the sightings as a proven fact. The Mexican CSICOP committee denounced all this through a radio program and gave the press a complete file on the Pleiades fraud.

Astrology is, beyond any doubt, the most extensive superstition in Mexico at the moment. It has gained access to almost all periodicals and newspapers in the country. Public cultural and educational TV channels have been broadcasting horoscopes regularly in recent years. However, actions taken by the committee,

mainly through newspapers and news magazines, have been very successful and astrology has ceased being promoted on public TV—for the moment, at least.

But not everything in broadcasting is good news. The private Mexican TV network (Televisa, a collection of the worst aspects of all American commercial networks put together) has opened a noncommercial "cultural" TV channel on which not only astrology but almost any kind of pseudoscience and the wildest superstitions can find warm refuge and ample and uncritical diffusion. Its specialty this season has been computerized horoscopes. Our group has already satirized this in radio and TV appearances. (The whole idea is so ridiculous that we have not found a more suitable measure.)

In radio, the situation is much worse. Station XEW, the most important AM station in the country, owned, as it might be expected, by Televisa, not only broadcasts horoscopes and other astrological pseudoinformation, but also all kinds of medical charlatanry, religious fanaticism, and current occult fads: conversing with plants, reincarnation and life after death, miraculous cures, and so forth. We are doubly embarrassed about this because XEW has a powerful shortwave signal, broadcasting to a wide audience all over the world.

There is also in Mexico a weird society that supports and teaches a kind of advanced astrology they call "cosmobiology." (They use black holes, pulsars, and quasars in their computations.) We have debated with their followers on television. A member of our section—Charles Calderón, a civil engineer and professional magician—took one of their courses and has not quite recovered from it yet!

Another important movement in Mexico, headed by a handful of swindlers, allegedly teaches children to read with the palms of their hands or the skin of their faces (depending on the seriousness of the established controls). They have set up several schools where they have so far trained around 3,000 children. We were lucky that James Randi, on a visit to Mexico, conducted several controlled tests of these claims at the School of Psychology of the University of Mexico. The result was appalling: their best subjects, several children and a "gifted" blind youth, failed dismally on all tests. The fraud was exposed, and we gave it all due publicity in the press and on radio.

In spite of all this, within the same school one investigator remains a true believer in "dermovision." His scientific explanation of this phenomenon is a quaint theory based on—you guessed it!—quantum mechanics. When these things were subjected to debate in the auditorium of the school, it became obvious that everything was a question of faith rather than of experimentation.

Creationism is not a great problem in Mexico, since the Catholic church accepted biological evolution in 1952. (This may be interesting to those who are intent on demonstrating that "creation science" is nothing more than badly disguised religious dogma.) However, fundamentalist Protestant missionaries, such as those of the so-called Linguistic Summer Institute, are now spreading creationist ideas among many Indian communities. I don't know what effect this may have, since the Indians already possess some really interesting and even exciting legends about the creation of the world. Except for our commentaries on the situation in the United States, nothing concerning this matter has appeared in the Mexican press.

Unfortunately, the attitude toward the paranormal of the more or less cultivated sectors of our society and of scientific circles can be described as one of

complete indifference. Few of them consider it worthwhile to work in countering the activities of these loons and swindlers. Only within the School of Psychology at the University of Mexico have we found high-level backing. Because of this we prefer to channel our activities through the press rather than through academic and scientific circles.

We have had some important successes and have achieved a reputation that allows us to be included in almost any discussion on the paranormal that takes place in the media. •

Netherlands: Psychic Surpluses and a Call for International Cooperation

Piet Hein Hoebens

THE STATE of belief in that part of Europe I consider to be my *fief* does not, I think, fundamentally differ from the state of belief in other parts of the developed world. There is a pattern of paranormal beliefs that is simply part of modern life. It is a universal phenomenon with basically insignificant local variations.

In the Netherlands people are no different from Americans, French, Italians, or Australians, in that they find it hard to resist the temptations of the unbelievable. However, they do not necessarily select the same phenomena as targets of their credulity. The supply of miracles also has characteristics particular to the area.

For example, Holland has a surplus of so-called psychic detectives, to the point that they have become something of an export item; but there is a definite shortage of poltergeist cases, and flying saucers are also sadly underrepresented.

Holland is probably unique in that back in the fifties the queen officially received George Adamski at the Royal Palace for an eyewitness report on current affairs on Venus; but no resident of the kingdom has ever been granted the privilege of a UFO-abduction, and, for some reason, those extraterrestrials given to the disconcerting habit of cattle mutilation will not touch our cattle.

Dutchmen think the British superstitious for believing in ghosts, and they think the Americans gullible for having swallowed Peter Hurkos. Ghosts and Peter Hurkos are nonsense, most Dutchmen think—unlike faith healing, Gerard

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Piet Hein Hoebens is an editorial writer for Holland's leading newspaper, De Telegraaf, *and a writer on paranormal controversies. He is head of CSICOP's Netherlands section.*

Croiset, horoscopes, and the miraculous powers of copper bracelets. We may not have a chief of state who believes in astrology, but Leyde University supports a professor of Blavatskian metaphysics.

Instead of giving further examples of Dutch beliefs and unbeliefs, I wish to offer a few words about some problems—both philosophical and practical—facing those who are worried by the "occult explosion" and who feel the urge to actively promote the skeptical viewpoint.

Problem No. 1 is the danger of excessive polarization between skeptics and so-called believers. If you carefully look at the history of the paranormal controversy you will find that serious mistakes have been made on *both* sides. Some of the predecessors of CSICOP have fallen into the trap of skeptical dogmatism, and have thereby lost their effectiveness. The best way to avoid this trap, I would suggest, is to seek cooperation, whenever possible, with other groups—especially those that are the targets of our skeptical curiosity.

There are several reasons we should seek to be on speaking terms with those proponents of paranormal claims who have indicated that they are willing to play according to the rules of the scientific game.

The first reason is simply intellectual honesty. CSICOP-associated skeptics are committed to the point of view that claims of the paranormal may not be rejected on a priori grounds, antecedent to inquiry. This can only mean that we must seriously consider the possibility that the verdict of history will be that we were wrong and the proponents were right on a number of issues.

The second reason is a more practical one. If we want to debate the paranormalists fairly and effectively, we must take pains to ensure that we are criticizing what the other side is really claiming and not attacking straw men. The pro-paranormal literature is vast and complex, and few skeptics can afford to spare the time and the energy needed for keeping abreast of all developments in, say, parapsychology or astrology. It is very easy for a skeptic accidentally to overlook a possibly important piece of information that tends to support the nonskeptical hypothesis and thus expose himself to the charge of data selection or even misrepresentation. We can avoid such risks by keeping in touch with knowledgeable proponents and by consulting them before we attack certain claims in public.

The third reason is contained in a quotation from Ray Hyman: "The believer-skeptic dichotomy tends to overshadow the fact that there are important overlappings of common interests and goals that cut across this dichotomy." Several proponents of paranormal claims are nonskeptics only to the extent that they predict that the application of scientific research methods will result in the vindication of certain extraordinary claims. However, the proponents I am referring to here are very conservative in their methodology and in their philosophy of science and they will usually agree with the skeptics on such issues as what constitutes acceptable scientific evidence. So these people are really on our side, and we should be careful not to lump them together with the real crackpots.

The fourth reason is practical and perhaps even a little Machiavellian. Proponents of the paranormal are often extremely good sources of information for skeptics. The skeptic who restricts himself to critically reading the literature may get a somewhat unrealistic idea of what is really going on in the alternative sciences. For proper perspective, we cannot dispense with the backstage information, with the gossip that only the insiders will be able to give us. However, these

insiders will only part with this information if they know that they can trust us.

Problem No. 2 is far more practical than problem No. 1 and is basically about the accessiblity of relevant sources. Much valuable information is contained in books and journals that have become very rare and difficult to obtain. Often this literature will give us clues to the solution of paranormal problems that puzzle us today. Some proponents like to buttress their case by citing spectacular anecdotes of ancient miracles—and are not contradicted for the simple reason that few if any skeptics are aware of the published criticisms. A related problem concerns the skeptical literature that continues to be cited by enthusiastic unbelievers who are not aware of the published rejoinders.

The fact that a book or article concludes the nonexistence of a paranormal phenomenon does not guarantee that it is reliably documented or that it reaches its negative conclusions on the basis of adequate evidence. It is always risky to rely on secondary sources. To locate the primary sources, however, involves a lot of work. In practice, this can only be done if skeptics from all over the world pool their resources. What we need is a comprehensive and critical bibliography of the literature—and here I mean the literature pro *and* con.

A final problem I want to discuss briefly is the language barrier, which often complicates or even renders impossible skeptics' attempts to obtain reliable information on certain much-publicized claims. Many such claims are effectively protected from debunking assaults by the simple fact that the relevant documents are only available in a language with which the debunker is not familiar. Thus I have found that many prize cases involving the internationally renowned Dutch psychics Hurkos, Croiset, and Dijkshoorn continue to be cited as strong evidence for ESP in English-language publications, whereas in fact these claims are fantastic distortions of entirely nonspectacular incidents. The documents proving this, however, are in Dutch or in German and are not accessible to someone who does not read those languages.

There is a need for intensification of international skeptical cooperation, so that no questionable miracle is safe from skeptical investigations even if it takes refuge in a distant country. •

U.K.: Horoscope Breakfasts and ESP on the BBC

Michael Hutchinson

THERE ARE two ways of judging the level of belief in the paranormal. The first and best way is with a well-designed public opinion poll. The second is

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by looking at media coverage of the subject. What are the results of these methods in the UK?

The last poll that I know of was conducted by that cornerstone of rationality and truth the *London Times*. But what a disaster their poll was! For it was self-selecting. When looking for an accurate answer, a self-selecting poll leaves a lot to be desired. I don't think it can even be considered as indicative. But so far it's the best we have.

The result of the *Times* questionnaire was published on Saturday, December 20, 1980. Of the 1,314 people who responded, only 2 percent stated that they do not believe in psychic experiences. The remaining 98 percent were made up of those who thought that psychic experiences certainly exist (64%), probably exist (17%), and possibly exist (also 17%). Of the 98 percent, 83 percent believed in ESP and telepathy, while only 29 percent accepted reincarnation. Oddly enough a higher percentage believed in apparitions of the living (33%) than believed in reincarnation. Seventy percent accepted dowsing.

To give a further flavor of this questionnaire let me quote a series of questions:

> Have you had any contact with someone who has died? [This is followed by three multiple choice answers: once, more than once, and never.]
> If it happened, how did you experience it?
> Was anyone else with you and in a position to observe?
> Was a pet with you at the time?
> [If yes] did it show any sign of stress or unusual behavior?

It is possible that these questions are familiar to some of you because much of the *Times* questionnaire was devised by Dr. Karlis Osis and Dr. Erlunder Haraldsson with the intention of using it in countries all over the world.

One of the additional subjects included was dowsing—or water-witching, as it is known in the USA. As mentioned, 70 percent of the believers accepted dowsing. However, its inclusion riled the vice-president of the British Society of Dowsers, who claimed that dowsers were "appalled" at their inclusion. This was defended by the *Times* on the grounds that the question asked was about experiences that "do not always have a ready scientific or natural explanation at the present level of knowledge." *Present level of knowledge?* It is a shame that the *Times* didn't hire someone to write this piece who had some knowledge of science—or had read the SKEPTICAL INQUIRER.

I understand that a properly conducted poll was in fact carried out last year on behalf of the Society for Psychical Research. The analysis of that poll is almost complete and should be reported by SPR in 1984.

The second method of judging the state of belief in the paranormal is to look at the way books, newspapers, magazines, radio, and television report the subject. I do not think it takes a psychologist to realize that people's beliefs are going to be influenced not only by what they read but also—and perhaps more so—by the regularity with which a subject is presented to them. Perhaps—just perhaps—even readers of the *National Enquirer* will be just a little skeptical the first time they read of some extraordinary psychic success. But when they see similar claims being made they begin to accept that there may be something to them.

The saddest thing to report is that even the BBC and the better quality newspapers have climbed on the psychic bandwagon. The BBC has more uncritical paranormal items than the independent television channels. Even the BBC's "Breakfast Time" show has its daily dose of horoscopes. Its astrologer has become quite a personality, appearing in other programs as a celebrity guest.

The producers of the breakfast program are not enthusiastic at the idea of devoting time to astrology, but they realistically acknowledge that the program's popularity relies on such nonsense. The program's editor defends the inclusion of an astrologer, claiming that it is only light-hearted and that no one believes that the astrologer is making statements of great wisdom.

The BBC jointly produces the NOVA/Horizon series with WGBH Boston. Some years after the excellent Bermuda Triangle and Ancient Astronauts programs, they put together a 90-minute program called "The Case of ESP." Besides being twice as long as a normal Horizon edition this program was also heavily promoted by the BBC. Its weekly magazine *Radio Times* devoted its full-color front page and several inside pages to it.

But what of the program itself? I found it to be very dishonest. Although skeptics Susan Blackmore, Ray Hyman, Mark Hansel, and David Marks were given time to state their cases, much of the program was devoted to unbalanced propaganda supporting psi.

For example, the commentary about the use of psychics in police work included only one or two sentences admitting that two controlled studies had produced negative results. But instead of giving details of these tests an assistant district attorney was interviewed because—it would appear—his testimony supported the use of psychics in police work.

Similarly, a disproportionate amount of time was given to a claim that Russell Targ's group, Delphi, had succeeded nine times out of nine in predicting the rise and fall of the silver market. This included shots of the siliver market and interviews with two stockbrokers. But only two sentences were used to tell us that earlier this year the system had failed. (NOVA presented a 60-minute version of "The Case of ESP" on the public television network on January 17, 1984. The SKEPTICAL INQUIRER will publish critiques of it in the next issue.)

There is much more that I could say about the promotion of the paranormal in the UK. There seems to have been a tremendous upsurge of interest by the press in the past ten years or so. But perhaps this is just my imagination. I decided to check a press guide to see whether there had been an increase in the number of publications devoted to the subject. Much to my surprise I discovered that, except for two small-circulation magazines, the majority of current publications have been in business for anything from twenty to more than a hundred years. One of the exceptions to this is a magazine that started in late 1980 and ended, as planned, just a couple of months ago after publishing over 120 issues.

I am pleased to report that even the BBC—for which I have little regard—can produce a balanced program if they try. The producer of the Horizon program on ESP was previously responsible for a rational look at metal-bending. This program was neither for nor against metal-bending. It left viewers to make up their own minds. Personally, that is all I ask and I feel sure that is all most of the Committee ask. It is shameful that we have to fight so hard in order to achieve it! •

Australia: Dowsers, Yowies, and the Tasmanian Triangle

Dick Smith

I AM NOT a scientist or an intellectual, but my business is in one of the most exciting areas of applied science—electronics. I have specialized in selling electronics to consumers and encouraged them to participate in the modern and fantastic developments in electronics.

In the course of running my business, I have become aware of the many strange beliefs held by Australians. My mail includes letters suggesting I cooperate in developing new ideas from perpetual motion machines to flying saucers. All had one thing in common—with the writer's ideas and my money we could both become rich and famous!

Instead I invested in a subscription to the SKEPTICAL INQUIRER and found that others shared my concern about the widespread belief in the paranormal. I found a letter in the SKEPTICAL INQUIRER from a fellow Australian, Mark Plummer, and wrote to him suggesting we get a CSICOP group going in Australia and that we invite Randi out for a visit.

Randi was unknown in Australia prior to his arrival. I was anxious for him to conduct some tests and decided on a test of water divining as Australia is a very dry continent with an abundance of water diviners and dowsers. There are more water dowsers in Australia than you could poke a stick at.

With the incentive of a prize of $50,000, many diviners came forward to be tested by Randi. None passed the test. The failed diviners made all manner of excuses and rationalizations as to why they failed. A major documentary was made and shown on national television. Randi's presence also caused a manifestation of the well-known "shyness effect." In Melbourne we have a Dr. Osborne, who claimed to have found and tested over forty psychic spoon-bending children. Randi appeared at the college at which Osborne lectures and repeated his offer to test the children, but Osborne said that he had contacted all of the parents and none was interested in the $50,000! Since Randi's visit Dr. Osborne has been strangely silent.

However, it was not the tests or the offer that gained the most publicity. It was Randi's appearance on a popular national TV program—"The Don Lane Show," an equivalent to the Johnny Carson show. Don Lane's show was a platform for many clairvoyants and psychics. But when Randi bent objects on his show, Don Lane lost his cool, said, on the air, "You can piss off," and then ran across the studio and off the screen.

The subsequent furor brought more phone calls from listeners than any other subject that year—and the viewers comments were 2 to 1 in favor of Randi. Randi became a media hero overnight, and at the end of his tour we were able to

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Dick Smith is president of Dick Smith Electronics Ptd. Ltd. and author of many books on electronics and aviation. He recently made the first solo helicopter flight around the world. He is co-patron of the Australian Skeptics, the Australian branch of CSICOP.

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set up the local section of CSICOP—the Australian Skeptics. I am co-patron with Phillip Adams, a national columnist and filmmaker, and Mark Plummer is our national chairman. We have plenty in Australia to keep us busy.

Every morning I can listen to an astrologer on TV's "Good Morning Australia," read my stars for the day in my morning paper, or dial a number on the government-owned telephone system for my star-reading for the day.

I can go downtown in Sydney, our largest city, to the lobby of the tallest building in the Southern Hemisphere, the Sydney Tower, and pay $2 for my biorhythm reading, my palm reading, or my horoscope, or collect my lucky numbers for the lottery. I can then take the lift to the top and see "Earth's Largest UFO Exhibit." This is a collection of the best UFO photos and tape recordings of contactees and models of extraterrestrials. It will be occupying this high rental space for the next 18 months and will be seen by hundreds of thousands of Australians.

Australia has many reported sightings of UFOs and they get great media coverage. One UFOlogist even produced a book in which he claimed that a certain material came from a UFO. It may have, but since it turned out to be common fiberglass it probably had a more mundane origin.

In addition to UFO sightings Australia has the same paranormal beliefs that are found elsewhere in the world. The majority of beliefs have their origins outside Australia. Books on the paranormal written overseas fill large areas in our bookshops. Australian newspapers and magazines carry overseas stories about the paranormal. Our electronic media carry the very latest paranormal stories from abroad only hours after the story has broken in the country of origin. For example, in September 1983 we had film of the latest apparition of the Virgin Mary in Texas the same day it was on U.S. TV news. We are flooded with U.S. documentaries on subjects like the Bermuda Triangle and Bigfoot.

However, the media are not so quick when it comes to debunking stories. When our papers wrote a story on a psychic finding lost youths in the U.K., we sent the articles by airmail to Mike Hutchinson, CSICOP's man in the U.K. He sent back the correct version of the facts by airmail. But by the time we had the truth it was "stale news" and the papers were not interested in carrying a followup story. Australia's media problem is the same as that in the United States—a bias for sensational paranormal stories. Australia is also on the circuit for the international psychic jet set. Uri Geller and Doris Stokes have toured Australia, and most recently, Michael Manning, who was exposed by Randi six years ago. In addition to those that have been imported, local promoters have found variations of the worldwide paranormal beliefs in Australia. Thus a stretch of waterway between the mainland of Australia and the island of Tasmania—the Bass Strait—is our Bermuda Triangle, where planes are snatched by UFOs.

You have your Bigfoot, we have our Yowies. Our Aborigines were allegedly in touch with ancient astronauts, and their curses are still held responsible for deaths in strange circumstances.

We have our own ghosts (some appear in bikinis), our own water-powered cars, and our own pyramid glass houses for growing plants—one of which was paid for by the local authorities and stands proudly in the main gardens of our western city Perth.

Comparing the strength of paranormal beliefs held by Australians with that overseas, it would seem that some, such as water dowsing, are more widely

accepted in Australia. Others, such as creationism, are not so widely accepted here as overseas. This may be due to local factors. Australia is an arid country, and water therefore is much sought after. And since Australia is not so religious as the United States, creationism is not an issue.

We do have many Australians who claim to have psychic powers. We have our clairvoyants, exorcists, palmists, iridologists, card readers, levitators, astrologers, psychic surgeons, and faith healers. Some Australians claim to be in touch with other planets, and the Virgin Mary is supposed to visit an Australian farm almost every week.

Although we have a large number of Australians who claim to have psychic powers, very few have come forward to be tested. More than two years ago I offered a cash prize for any person who could prove they have psychic powers. Apart from water diviners less than 20 people have written to me asking the details of the tests!

The offer has had plenty of publicity, as has the Australian Skeptics. To date we have not produced a significant change in the strength of paranormal beliefs in Australia. However we have increased some people's doubts, asked some questions and burnt the fingers of some would-be psychics. We have contested previously unchallenged claims and will continue to do so. I'm happy to say that our "Today" and "Tonight" shows no longer feature paranormal claims the way they did in the past.

We cannot do this alone and we have been very pleased with the willingness of CSICOP people overseas to send us information. We have been able to return this favor by forwarding information on Australian paranormalists who have gained publicity for their claims overseas.

We do not know if Australians are more or less rational people than elsewhere, and if someone could design a test of paranormal beliefs in the community we would be happy to arrange its testing in Australia. •

Canada: Media Push the Paranormal

Henry Gordon

THE CANADIAN population has the same high percentage of belief in the paranormal as any other country. You don't have to look far to discover the main source of these beliefs—the print and broadcast media.

Here is a quick rundown of some of my own experiences with the media in

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Canada. This is only a capsule criticism—it would take many times the space allotted to me to relate the whole story.

"Canada A.M." is the country's prime morning TV show, a network program equivalent to "Good Morning America" or "The Today Show" in the United States. I have appeared on the program several times—once immediately after an appearance by Uri Geller, to straighten out one of his bent keys. In the past year or two it has had several features on the paranormal, always stressing the "unexplained." One feature was on animal mutilation in western Canada. One covered a group of Canadians visiting the Philippines for psychic surgery, without a word mentioned of the charlatanism involved. Another program showcased "psychic" Geraldine Smith. The latest promoted the *Book of Runes,* a totally nonsensical book that touts methods of medieval divination.

In each case I called the producers and offered to present their audience with explanations that would give some balance to their programs. For some strange reason they didn't seem interested.

"Morningside," a prestigious Canadian Broadcasting Corporation daily network radio show, is another program on which I have made many appearances over the years, mostly talking about the history of magic and great magicians of the past. When I take the opportunity to comment on the paranormal there seems to be a long interval before I am asked to come back. To quote a producer of the show, "People are tired of that stuff. They don't want to hear about it." What he really meant was that the people associated with "Morningside" weren't interested in hearing about the rational side of the controversy.

"Ideas" is Canada's leading cultural radio program. It's aired on the CBC network for one hour every evening. They called me recently to ask if I would appear on a three-hour series they would be doing on the paranormal. The program was to give a balanced viewpoint, they said. I later found that the host was to be Adam Crabtree, an active occultist.

A few days before taping time I was informed that my participation would not be required. The reason? There were enough skeptics on the program to give it balance. Do I detect the fine hand of Mr. Crabtree? When the show was aired I listened with interest. The balanced program went something like this:

Hour One: Pro-paranormal talks by Charles Tart, Ian Currie, Stanley Krippner, Gertrude Schmeidler, John Hasted, Raymond Moody. Skeptics? Antony Flew—one minute!

Hour Two: Same lineup of purveyors of the paranormal. Skeptics? None!

Hour Three: The same people. Skeptics? Paul Kurtz—2 minutes (from a half-hour interview). Jim Alcock—5 minutes. Antony Flew again—40 seconds. It would seem that someone had done some editing.

A fourth hour was added to the series. I was told that listeners' opinions would be taped and aired. Instead, the host asked listeners to phone in their psychic experiences. I needn't elaborate on how this hour turned out.

I should also point out that after Kurtz and Alcock appeared, the host criticized them for their dogmatism.

All this is not to say that I have given up. We can still use the media to present the case for rationality. A provocative debate or a challenging article will still catch their interest. They are not interested in helping our cause—they will publicize it only if we can find ways to make it novel and newsworthy.

It's an uphill struggle for CSICOP—but it always will be. •

France: Indifference in Scientific and Philosophical Circles

Michel Rouzé

IT MAY BE interesting to point out several characteristics of belief in the paranormal that I think are more or less specific to France.

There is an almost total absence in the academic world of any reference to belief in the paranormal. France's universities are under state control. The few private schools of higher education are for the most part Catholic. Cartesian tradition and religious tradition converge to deny scientific respectability to contemporary claims about paranormal phenomena. There is, though, Francois Russo, a Jesuit and a specialist in the history of science, who has developed the theory that, since the existence of miracles recognized by the church cannot be questioned, this also proves the existence of alleged "psi" powers. These powers can be exercised in secular form (for example, by Uri Geller) or with divine inspiration (such as miracles performed by saints). However, Russo's view is an isolated one: The Roman Catholic church does not easily accept claims of present-day miracles.

In spite of some misleading information diffused by the mass media, there doesn't exist in France either a university research center or a teaching program for paranormal phenomena. An example of an impostor in this field is Y. Lignon. a mathematics teaching assistant at the University of Toulouse. Having assembled around him several students interested in experiments in telepathy, and in spite of being disavowed by the president of the university, he appointed himself professor and director of a parapsychology laboratory that exists only in his imagination. This makes it possible for him to appear on television and to be interviewed by journalists.

This situation at the universities in France should not be interpreted necessarily as a general skeptical or hostile attitude toward paranormal phenomena. The average attitude is rather one of agnosticism or indifference tinged with eclecticism when confronted with contradictory opinions. Militant skeptics—such as the astrophysicists Evry Schatzman and J. C. Pecker, the physicist A. Kastler, and the neurophysiologist Yves Galifret—are a small minority and have great difficulty obtaining cooperation even from those colleagues who approve of them. High-level scientists who believe in the paranormal are even more unusual and are very isolated, for example, the physicist O. Costa de Beauregard, who has developed an interpretation of quantum mechanics that gives a theoretical base to paranormal phenomena, and the entomologist R. Chauvin, who is the author of several books about paranormal phenomena and has appeared on numerous television programs but carefully separates this activity from his professional work.

In university circles and among other educated people, a frequent reaction to skeptical reasoning is the following paralogism: "Since you cannot prove *all*

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paranormal claims are false, there may be *some* truth in them."

The lack of interest in paranormal phenomena among university faculty favorably inclined toward them, as well as among those who are skeptical, probably explains the low level of activity of the French Committee for the Study of Paranormal Phenomena (CFEPP), which was founded several years ago on the pattern of CSICOP. However, as secretary of this organization, I hope that in the coming months it will bring to a successful conclusion an experiment it has prepared concerning the neo-astrology of Michel Gauquelin, which has just entered into a new phase.

Television and radio stations in France are also state-run (except for smaller, local radio stations that have recently been authorized), but their attitude toward paranormal ideas is not the same as in the universities. Competition among the responsible authorities of the stations is as intense as in the private media, so a large number of programs are allotted to paranormal ideas in all forms: parapsychology, flying saucers, astrology, etc. To keep up the appearance of objectivity, they from time to time organize discussions presenting both points of view, but many qualified scientists are reluctant to participate because the discussions are too superficial. However, there have been several programs to counter mystifications. For example, when J. P. Girard, the French equivalent of Uri Geller, failed the experiments controlled by physicists, he had to admit that on occasion he cheated. But this was exceptional. All things considered, radio and television exert strong pressure in favor of the paranormal.

The new political administration in France has taken initiatives to promote a scientific turn of mind among young people, but it has not yet come to the conclusion that such an effort is incompatible with publicizing paranormal ideas. When President Mitterand gave an inauguration speech to an important scientific meeting in Paris, he used the word "astrology" instead of "astronomy." This slip, widely noticed by the audience, was later diplomatically attributed to a typing error.

Contrary to French radio and television, the print media belongs to the free enterprise part of the economy. Most wide-circulation daily newspapers as well as most monthly and weekly magazines (especially those with a feminine audience) have an astrology column and publish frequent articles about paranormal subjects and related themes.

The indifference of high-level scientific and philosophical circles toward the irrational wave contributes to the fact that in France there are few systematic studies on the subject and few skeptical works comparable to those published by Prometheus Books. Nevertheless, there are publications of the Rationalist Union, such as "Occult Sciences Are Not Sciences" by R. Imbert-Nergal (not very recent), an issue of the review *Present Reason* entitled "Parapsychology Yes or No?" and two good UFO books written by disillusioned former believers. Other publishers have produced a book by the magician Majax (who could be considered a counterpart of Randi), my own books, and articles printed in the monthly magazine *Science et Vie,* whose editor-in-chief, Philippe Cousin, is joint-secretary with me of CFEPP. A small monthly bulletin I publish under the title *AFIS* (French initials for the French Association for Scientific Information) has been giving more and more attention to a campaign against belief in the paranormal; sometimes it uses information from the SKEPTICAL INQUIRER. Due to a lack of capital at the beginning. *AFIS* has so far only about a thousand subscribers.

In 1971, the sociologist Edgar Morin published statistics related to belief in horoscopes among various social classes. A study done in 1980 for the French National Center for Space Studies (CNES) by two marketing specialists (J. N. Kapferer and B. Dubois) revealed that one Frenchman out of three believes the sun revolves around the earth and that nearly twelve million believe in visits aboard extraterrestrial UFOs.

To my knowledge, by far the most important French work on belief in the paranormal is a doctoral thesis presented in April 1983 in Paris by a young sociologist, G. Chevalier. Basing his analysis on the relationship between what he calls modern occultism and legitimate science, he made a methodical questionnaire survey of various population groups using data-processing techniques. The statistical matter presented in many numerical tables led him to conclusions I can only briefly summarize here: The growth of paranormal beliefs (and correlatively of their commercial exploitation) results, at least in large part, from the gap between the increase in the number of people with middle-level diplomas and the modest social level to which they belong. Paranormal beliefs are both a compensation for the sense of dissatisfaction created by this gap as well as a search for greater knowledge than what these people were actually able to acquire. Also, it is a form of alternative culture. These findings reinforce the conclusion of J. N. Kapferer and B. Dubois that belief in the paranormal is at a maximum in the middle social classes in France. •

Erratum

In the article by Ganoe and Kirwan in the Winter issue, the following two lines were omitted from the bottom of page 135:

lights while the performer is demonstrating "psychic sight."

The superficial skeptic may protest that turning off the lights

Debunking, Neutrality, and Skepticism in Science

How should science deal with the paranormal? Well-informed debunking of outlandish claims is legitimate, but seriously proposed and researched hypotheses deserve a fair hearing and responsible analysis.

Paul Kurtz

THE TERM *paranormal* was not invented by the Committee for the Scientific Investigation of Claims of the Paranormal but has been widely used, first by parapsychologists and later by others to refer to anomalous phenomena that allegedly could not be explained in terms of the existing categories of science. "Paranormal" refers to that which is "beside" or even "beyond" the range of normal experience and explanation. It is used to depict phenomena like clairvoyance, precognition, telepathy, psychokinesis, levitation, poltergeists, astral projection, automatic writing, communication with discarnate spirits, and so on.

Most skeptics deny that the term *paranormal* has any clearly identifiable meaning. Like the "noumenal," "occult," or even "supernatural," its precise referents are vague and ambiguous. The boundaries of human knowledge are constantly expanding and being refined, and what was unknowable yesterday may become scientifically explicable the next day; thus the DNA code, the concept of black holes, and newly postulated subatomic particles surely cannot be said to have been "paranormal" when they were initially proposed. Is the paranormal simply equivalent to that which is "unfamiliar" or "strange" at one state in the development of

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human knowledge? If so, that would not make it unusual. The term *paranormal* has also been stretched far beyond parapsychology to other, so-called mysterious powers within the universe not contained within the parameters of our existing conceptual framework. It has been used to refer to such disparate phenomena as reincarnation, life after life, biorhythms, astrology, UFOs, Chariots of the Gods, the Bermuda Triangle, monsters of the deep—whether Nessie, Chessie, or Champie—Bigfoot, cattle mutilations, human spontaneous combustion, psychic archaeology, and faith healing; in short, almost anything that comes within the range of human imagination and is thought to be "incredible."

On the current world-scene, belief in the paranormal is fed and reinforced by a vast media industry that profits from it; and it has been transformed into a folk religion, perhaps the dominant one today. Curiously, it is often presented as "scientifically warranted" and as a new, if bizarre, conception of reality that is breaking down our naturalistic-materialistic view of the universe.

Contemporary science is rapidly expanding in many directions: On the macrolevel, astronomy reports exciting new discoveries. The quest for extraterrestrial life is one of the most dramatic adventures of our time. This is grist for science fiction and the poetic imagination, outstripping that which has been verified or is technologically feasible today. On the microlevel, physicists postulate new particles in an attempt to unravel the nature of physical reality. And in the life sciences, biologists are decoding the genetic basis of life and are on the threshold of creating new forms. At the same time, the information revolution unfolds stunning new applications.

Men and women have always been fascinated by the depths of the unknown. As far back as we can trace there has been an interest in the occult and the magical. The persistence and growth of ancient paranormal beliefs in our highly educated scientific-technological civilization is a puzzling phenomenon to many of us. There are many reasons for this, not the least of which are the fast pace of scientific progress, the role of science fiction in stimulating the imagination, and the breakthrough into space beyond our planet. And so people ask, for example, why is it not possible for the mind to engage in remote viewing of far distant scenes and events, precognate or retrocognate, or to exist in some form separate from the body. Present-day science for many seems to demonstrate that virtually *anything* is possible, and that what was once thought to be impractical or unreal can later be found to be so. And they think perhaps psi phenomena, biorhythms and horoscopes, faith healing and extraterrestrial UFOs are genuine. There is some confusion in the public mind between the possible and the actual, and for many people the fact that something is possible converts it into the actual.

Some skeptics have dissented, maintaining that since paranormal con-

cepts contradict the basic conceptual categories by which we understand and interpret the world, they may be rejected on a priori grounds. In my view, it is difficult to impose preconceived limits to inquiry or to rule out such claims as logically "impossible." The history of science is littered with such vain attempts. Whether or not paranormal phenomena exist and, if they do, how they may be interpreted can only be determined in the last analysis within the process of scientific verification and validation and not antecedent to it.

What Should Be the Role of Science?

Now the question is often raised: How should science deal with the paranormal?

One familiar response is that science should ignore the paranormal entirely. Many scientists until recently considered it beneath their dignity to become involved in what they viewed as patent nonsense. This has not been the response of those scientists and scholars associated with CSICOP. We believe that such claims ought to be investigated because of the widespread public interest and also because some paranormalists on the borderlands of science claim to have made significant discoveries.

If one decides to examine such claims, how does one proceed? One way is to debunk nonsensical paranormal beliefs. Martin Gardner quotes H. L. Mencken to the effect that "one horse-laugh is worth a thousand syllogisms." Some people have insisted that debunking is not an appropriate activity, particularly for academic scientists. To "debunk" means "to correct a misapprehension, to disabuse, set right, put straight, open the eyes or clear the mind, disenchant, or dispose of illusion, unfoil, unmask, or tell the truth" (*Roget's Thesaurus*). Some of the claims that are made—even by scientists and scholars—are preposterous and debunking is not an illegitimate activity in dealing with them. Sometimes the best way to refute such a claim is to show how foolish it is, and to do so graphically. Indeed, debunking, in its place, is a perfectly respectable intellectual activity that any number of great writers have engaged in with wit and wisdom: Plato and Socrates, Voltaire, Shaw, and Mencken, to mention only some. Surely it has a place within philosophy, politics, religion and on the borderlands of science and pseudoscience. It should not, however, be abused but should be used with caution; and it should be based upon a careful examination of the facts.

But there are dangers here: Sometimes what appears to be bunkum because it does not accord with the existing level of "common sense" may turn out to be true. Mere prejudice and dogma may supplant inquiry. If one debunks, he had better command an arsenal of facts and marshal evidence to show *why* something is improbable or even downright false. We can ask, Does sleeping under a pyramid increase sexual potency? Do

plants have ESP and will talking to them enhance their growth? Do tape-recorders really pick up voices of the dead? All of these claims have been proposed by paranormalists within the past decade. They should not be rejected out of hand. On the other hand, at some point—after inquiry, not before—they may deserve forceful debunking; this is particularly the case when scholarly critiques of inflated claims go unnoticed by the public. Jeane Dixon and Uri Geller, for example, seem as unsinkable as rubber ducks—though some of us have attempted to make duck soup out of them. Thus we are concerned not simply with paranormal beliefs in the laboratory but with their dramatization in the media.

Another response to the paranormalists is to maintain that we should examine each and every claim—however far-fetched—that anyone makes, and to give it equal and impartial hearing. There are literally thousands of claims pouring forth each year. One cannot possibly deal with them all. We receive a goodly number of calls and letters every week at the offices of CSICOP from people who claim that they have prophetic powers, are reincarnated, or have been abducted aboard UFOs. Some of our critics nevertheless have insisted that this is the only appropriate response for science to make: to be neutral about them all. After all, were not Galileo and Semmelweis, and even Velikovsky, suppressed by the scientific and intellectual establishments of their day? And might not we in our day likewise reject an unconventional or heretical point of view simply because it is not in accord with the prevailing intellectual fashion? I repeat: This is a danger that we need especially to avoid. For the history of science is full of radical departures from established principles. Thus we must keep an open mind about unsuspected possibilities still to be discovered.

However, one should make a distinction between the open mind and the open sink. The former uses certain critical standards of inquiry and employs rigorous methodological criteria that enable one to separate the genuine from the patently specious, and yet to give a fair hearing to the serious heretic within the domain of science. Isaac Asimov has made a useful distinction between *endoheresies,* which are deviations made *within* science, and *exoheresies,* which are deviations made *outside* of science by those who do not use objective methods of inquiry and whose theories cannot be submitted to test, replication, validation, or corroboration. Even here one must be extremely cautious, for an exoheretic may be founding a new science. A protoscience may thus be emerging that deserves careful appraisal by the scientific and intellectual community. Or the exoheretic may simply be a crank—even though he or she may have a wide public following and be encouraged by the powerful effects of extensive media coverage. Simple neutrality in the face of this may be a form of self-deception.

Philosopher Paul Feyerabend has maintained that there are virtually no standards of scientific objectivity and that one theory can be as true as

the next. But I submit that he is mistaken. If we cannot always easily demarcate antecedent to inquiry pseudo from genuine science, we can after the fact apply critical standards of evaluation. Within these limited confines, then, I submit that some debunking is not only useful but necessary, particularly if we are to deal with the realities of belief in our media-coddled society. Given the level of ready public acceptance of the "incredible" and a tendency toward gullibility, one horse-laugh in its appropriate setting may be worth a dozen scholarly papers, though never at the price of the latter.

There is still another response to bizarre claims. In the last analysis this is the most important posture to assume; namely, if a paranormal claim is seriously proposed and if some effort is made to support it by responsible research methods, then it does warrant serious examination. I am not talking about antiscientific, religious, subjective, or emotive approaches to the paranormal, which abound, but efforts by serious inquirers to present hypotheses or conclusions based upon objective research. This is the case with parapsychology, which today deserves a fair and responsible hearing. Going back at least a century, some of the important thinkers—philosophers, psychologists, and physical scientists—have investigated the psychical: William James, Henry Sidgwick, H. H. Price, Oliver Lodge, William Crookes, and more recently Gardner Murphy and J. B. Rhine. Their work deserves careful analysis, though it is not immune to strong criticism on methodological and evidential grounds. Similarly for some aspects of recent UFO and astrological research. If there are falsifiable claims and conceptually coherent theories, then they need rigorous testing and careful logical analysis by independent scientific investigation. And here neutrality in the process of evaluation is the only legitimate approach; take a hypothesis, examine the experimental data reported, attempt to replicate the experiment, make predictions, and see if the theories are logically consistent and can be verified.

That this same neutrality should apply to fortune telling, horoscopes, tarot cards, palmistry, fortune cookies, and other popular fields is another matter. Take them into the laboratory to see if you can get results. But if you get no results, then the only response often is to debunk them.

What Is Skepticism?

Now it is no secret that CSICOP has been identified with the skeptical position. We have said that we do not find adequate support for many or most of the claims of the paranormal that have been made both within and without science. We have been bitterly attacked by paranormal magazines and newspapers (such as *Fate* magazine) for publishing debunking articles at the same time these publications purvey misinformation to the public and seek to sell everything from crystal balls to Ouija boards. We

believe that both debunking and careful scientific examination should be done. In regard to the latter, we often find in the parasciences a lack of replication, inadequate experimental design (as in J. B. Rhine's early experiments), and questionable interpretation of statistical data (as in the remote-viewing experiments of Targ and Puthoff). Sometimes—but only sometimes—there is fraud or deceit (as in the case of S. G. Soal, Walter Levy, and others), but underlying it all there is a strong will to believe (as Project Alpha has shown).

Skepticism is among the oldest intellectual traditions in philosophy, and it can be traced back to ancient philosophers like Carneades, Pyrrho, and Sextus Empiricus, and in modern thought to Descartes, Locke, Berkeley, Hume, and Kant. Today skepticism is essential to the very lifeblood of scientific inquiry.

There are many forms that skepticism can assume. One form it may take is universal doubt, the attitude that the reality of the senses and the validity of rational inference should be mistrusted. For this form of skepticism one must adopt an *epoché* in regard to all things; that is, assume the role of the agnostic and suspend judgment. Since one position is as good as the next, and all positions may be equally false, none can be said to be true. In philosophy, this has led to extreme solipsism, where one doubts not only the reality of the external world but one's own existence. In ethics, it has led to extreme subjectivism, a mistrust of reason, and a denial that there are any objective ethical standards; for values, it is held, are rooted in personal taste and caprice. In science, universal skepticism has led to methodological anarchism, the view that all scientific positions depend upon the mere prejudices of the scientific community and the shifts in paradigms that occur. If this is the case, astrology would be as true as astronomy and psychic phenomena as real as subatomic physics. Such a form of skepticism is easily transformed into the kind of "neutralism" discussed above—since all positions may be equally true or false, we have no way of judging their adequacy.

Universal skepticism is negative, self-defeating, and contradictory. One cannot consistently function as a total skeptic but must assume certain principles of inquiry, some of which turn out to be more reliable than others. We must act upon the best evidence we have, as our beliefs confront the external world independent of our wishes. Moreover, we do have well-tested hypotheses that may be held with varying degrees of probability and incorporated into the body of knowledge. The skeptic's own universal principle that there is no reliable knowledge must apply to itself; and, if so, we are led to doubt its range of applicability. A universal skepticism is limited by its own criteria. If we assume it to be true, then it is false; since if it applies to everything, it applies to itself, and hence universal skepticism cannot be universal. I do not wish to become impaled by the logic of types. The point I want to make is simply that the most meaningful form

of skepticism is a *selective* one. This maintains that doubt is limited to the context of inquiry. We cannot at the same time doubt all of our presuppositions, though we may in other contexts examine each in turn. The doubt that properly emerges is within a problematic context of inquiry and thus can be settled only by the relevant evidence—though perhaps not completely.

What I mean is that the scientific community is always faced with new research problems, and it seeks solutions to these problems (*a*) in the theoretical sciences, through explanations of what is happening and why, (*b*) in the technological and applied sciences, by resolving questions of application. There are alternative theories or hypotheses that may be proposed and compete for acceptance. Some of them may fall by the wayside; those that win out seem to accord best with the relevant data and the conceptual framework at hand, though these may in turn be eventually modified.

Clearly, a researcher should suspend judgment until he can confirm his hypothesis and until it is corroborated by other inquirers. However, no one law or theory can be said to be final or absolute, or to have reached its ultimate formulation. Here Charles Peirce's famous "principle of fallibilism" plays a role: for we may be in error, we may uncover new data, or alternative hypotheses may be found to fit the data more adequately. Thus we must be prepared to admit new hypotheses, however novel or unlikely they may at first appear. Science is open to revision of its theories: The self-corrective process is on-going. We must always be willing to entertain and not rule out new ideas. This applies to the established sciences, but also to newly emerging proto- or para-sciences.

Conclusion

I am often asked why belief in the paranormal is so strong in the world today, and especially in highly developed and highly educated scientific-technological societies like our own. There are many explanations that can be and have been given. I wish to conclude by mentioning only two.

First is the fact that we exist in a religious culture of longstanding historic traditions, and dissenting points of view in the area of religion are not given a fair hearing. Since belief in the supernatural and occult remains largely unchallenged, the paranormalist finds a receptive audience. There are at least two cultures existing side by side. On the one hand, the religious, and on the other the rational-philosophic-scientific. Until the religious is submitted to intellectual critique openly and forthrightly, the paranormal will continue to flourish on the fringe of science.

The second reason is that although we are a scientific culture we have not thus far succeeded in our curricula of scientific education in conveying the meaning of science. There is a widespread appreciation for the benefits

of scientifc technology, particularly for its economic value, as new industries are being spawned at a breathtaking pace. But at the same time there exists fear of science and its possible implications for other aspects of life. Sadly our elementary and high schools, colleges and universities, turn out specialists who may be extremely competent in their narrow fields of expertise, but who lack an appreciation for the broader scientific outlook. Within their own fields students are able to master their subject matter and apply the methods of science and critical intelligence, but these methods often do not spill over to other areas of belief.

In my view, a major task we face is proper education in science, both in the schools and for the general public. There is a failure to appreciate the importance of skeptical thinking. A truly educated person should come to appreciate the tentative character of much of human knowledge. The burden of proof always rests upon the claimant to warrant his claim. If all the facts do not support it, then we should suspend judgment.

Science surely is not to be taken as infallible, and some of the defects found in the pseudo- and para-sciences can be found in the established sciences as well, though on a reduced scale. Scientists are fallible, and they are as prone to error as everyone else—though it is hoped that the self-corrective process of scientific inquiry will bring these errors to the light of day. Similarly, it would be presumptuous to maintain that all intelligence and wisdom is on the side of the skeptic; for he may be as liable to error as the next person. Fortunately, we have our critics and they are only too willing to point that out—for which we should be grateful. We have made mistakes and have sought to correct them. We should not trust anyone to have all the truth, and this applies to ourselves as well.

Whether life can be lived truly rationally and whether all of our beliefs can be tested before we accept them is a topic that philosophers have long debated. Suffice it to say that selective skepticism can have a constructive and positive role in life, that some degree of skepticism is important, and that reflective individuals will learn to appreciate its value. •

University Course Reduces Belief in Paranormal

A three-year study with control surveys and one-year followup finds a decline in paranormal belief

Thomas Gray

THE HIGH LEVELS of belief in various paranormal phenomena reported in this paper will not surprise readers of the SKEPTICAL INQUIRER.

The results of this study will be presented in detail elsewhere, but a brief summary of the main findings will, I hope, be of interest because of the scarcity of data bearing on the effectiveness of academic interventions that attempt to bring about reductions in belief in the paranormal. Jerome J. Tobacyk's brief article in this journal (*SI*, Fall 1983) might only have whetted readers' appetites for more information about the reliability and durability of such changes.

A one-semester course was given under the heading "The Science and Pseudoscience of Paranormal Phenomena" in the Psychology Department of Concordia University—a large, English-speaking university in Montreal.

The 13-week lecture-format course was offered in the January semester in 1981, 1982, and 1983. The lectures dealt with basic, practical issues in methodology with particular emphasis on how to collect "good" versus "bad" evidence. Many paranormal topics were dealt with to exemplify the characteristics of reliable versus untrustworthy evidence, and students were alerted to alternative explanations for the claims of the paranormal. More time was spent dealing with claims for ESP and UFOs than other topics. In 1981 the lectures were supplemented with C. E. M. Hansel's *ESP and Parapsychology: A Critical Re-evaluation* (Prometheus Books, 1980), and in 1982 and 1983 with James Alcock's *Parapsychology: Science or Magic?* (Pergamon, 1981). The general-interest nature of the course and its introductory level attracted students from diverse backgrounds.

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A simple questionnaire device was used to assess the students' willingness to express belief in ten paranormal phenomena. They were assessed BEFORE and AFTER the course and, for the 1981 and 1982 samples, a followup (FOLLOW) survey was conducted one year later. The ten phenomena were listed on the left of a single sheet. To the right of each phenomenon were five boxes. Students were told to check the first box if they did *not* believe in the phenomenon. This first column of boxes was headed with the label "No." The next four columns represented four strengths of a "Yes" response. The strength of a "Yes" response was measured from 1 (weak) to 4 (strong). These numbers were used as ordinal scores.

The ten phenomena surveyed were: extrasensory perception (including telepathy, clairvoyance, and psychokinesis); extraterrestrial spacecraft (UFO); astrology (ASTR); ghosts (GHO); Bermuda Triangle (TRI); Von Däniken's theories (VOND): psychic healing/surgery (HEAL); miracles (MIRA) biorhythms (BIO); and reincarnation/life after death (REIN). Brief descriptions of each were given and it was made clear that I wanted to know if they believed in the phenomena, not whether they thought they were theoretically possible.

Filling out the forms was voluntary (one student declined). In the 1981 sample the BEFORE and AFTER forms were anonymous, but students identified their own questionnaire with a number. The students were assured of confidentiality, and for the 1982 and 1983 samples I asked them if they would not mind putting their names on the various forms to facilitate collation.

To control for changes over time, and to make sure that the course was not attracting students with unusually high levels of belief, students in two other university courses were surveyed in 1982.

There were approximately 30 students in each of the three classes, and there were 35 students in the control group. A fact of life in the Faculty of Arts and Science at Concordia is a 2 to 1 ratio of females to males. Overall the subjects surveyed here reflected that ratio almost exactly (68% female and 32% male). A separate analysis took gender into account.

The FOLLOW surveys were successful in contacting 27 of 32 students in 1981, and 29 of 32 in 1982. No followup has been done for the 1983 sample, and no followup was conducted in the case of the control group.

The percentage of those students saying "Yes" to each of the phenomena and the mean strength of those "Yes" responses were recorded. The FOLLOW survey was conducted by telephone approximately one year after the end of the course. In 1981 I conducted the survey, but the FOLLOW survey for the 1982 course was conducted by a research assistant. This same assistant collected the AFTER survey for the 1983 sample.

Table 1 shows the percentage of students saying "Yes" to each of the phenomena in the various surveys. The results here are for the three years combined.

TABLE 1

Percent saying "Yes" (1981, 1982, and 1983 combined)

	ESP	UFO	ASTR	GHO	TRI	VOND	HEAL	MIRA	BIO	REIN
BEFORE	85	69	55	43	55	46	49	43	46	69
AFTER	54	51	43	34	25	23	35	46	40	55
FOLLOW	68	46	61	45	39	39	43	54	46	57
	*	*			*	*	*		*	

* Indicates that the change from BEFORE to AFTER was significant ($p < .05$) with the McNemar test for significance of change. Because the McNemar test deals with only those subjects who do change, absolute amount of change must always be noted when employing this test.

The general trend is for a decrease from BEFORE to AFTER with an increase back to an intermediary position. A notable exception is that no overall decrease in the students' willingness to endorse a belief in miracles (MIRA) was affected.

The pattern of change was similar for the samples from individual years. The best year for change was 1982, when a significant decrease in belief occurred for all ten phenomena. In 1981 6 of 10 BEFORE to AFTER changes were significant and, in 1983, 5 of 10 were significant at the .05 level. The significant changes just reported could be seen in terms of decreases in the mean strength of the "Yes" response and were assessed with the Sign test. Table 2 shows, as an example, the mean strength of the "Yes" response for the 1982 samples. It should be recalled that these mean strength scores are calculated for those respondents who said "Yes" on the BEFORE survey.

TABLE 2

Mean strength of "Yes" responses for 1982 course survey

	ESP	UFO	ASTR	GHO	TRI	VOND	HEAL	MIRA	BIO	REIN
BEFORE	2.34	2.09	2.28	2.32	1.59	1.61	1.75	2.00	1.81	2.23
AFTER	0.83*	0.68*	1.11*	0.63*	0.12*	0.39*	0.75*	1.20*	1.00*	1.31*
FOLLOW	1.46*	1.43*	1.94*	1.59†	0.75*	1.06†	1.36*	1.77	1.86	1.91

* Significantly different from BEFORE ($p < .05$)
† Significantly different (borderline) from BEFORE ($p < .10$)

Comparisons were made between the control group and the 1982 sample. The percentages of students saying "Yes" in the BEFORE tests were similar to those of the combined data presented in Table 1. Chi-square tests could find no differences (for any of the 10 phenomena) between the control group and the 1982 course sample on the BEFORE percentages. Significant differences were found for the AFTER percentages in the case of ESP, UFO, TRI, HEAL, and REIN. Furthermore, the differences for GHO, VOND, and BIO were of borderline significance ($p < .10$). The results of these between-groups comparisons, a stringent test for this kind of data, thus confirm the effectiveness of the course in reducing belief.

Separate analyses for males versus females indicated a general tendency for women to be slightly more willing to endorse belief in the phenomena, but chi-square tests found only two significant differences (ESP and ASTR) in the BEFORE data and only one in the AFTER data (ESP). Although the comparison was not statistically significant, males were more willing to endorse belief in UFOs.

I think the data collected over the three years of this study provide firm evidence that an academic course can reduce belief in a variety of paranormal phenomena. It is encouraging that the changes in some cases are still statistically reliable after one year. One of the most consistent results across the years came from the ESP and UFO data where the AFTER and FOLLOW surveys were always significantly different from the BEFORE. More lecture hours were spent on each of these topics than on any other single topic dealt with in the course.

It is not surprising that the reductions in the willingness to express belief dissipate quite a bit over the one-year interval because the students are in a largely pro-paranormal environment. The amount of material available in magazines, books, TV shows, newspapers, and movies that presents critical reviews and alternative explanations is indeed tiny in comparison to the plethora of positive coverage.

I tend to interpret the changes in belief effected by the course as being a result of reductions in the students' ignorance of what constitutes reliable evidence, although belief in the paranormal is no doubt supported by many other factors.

It is difficult to throw off the tendency to place firm trust in personal confirmatory instances. It is difficult not to be impressed when your old friend telephones just at the moment you have been thinking about him. The reliability of "unimpeachable" eyewitness testimony is difficult to ignore. That overall changes in belief in miracles were not found is consistent with the ignorance interpretation, in that such beliefs are likely to be based on faith rather than "evidence."

Although the immediate changes are quite large, it is disappointing that the willingness to express belief is still quite high. Shall I tell my colleagues that belief in ESP can be reduced from about 85 percent to

about 50 percent, or shall I tell them that about 50 percent are *still* willing to say that they believe in ESP, UFOs, and reincarnation? Can we at least take heart that only about 40 percent of a sample of well-educated twentieth-century urbanites believes in ghosts? •

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The Gribbin Effect

A cool look at the latest claim that planetary alignments affect the weather

Wolf Roder

IN 1974 THE British astrophysicist John Gribbin treated us to a book-length exposition of the "Jupiter Effect."[1] He and his coauthor proposed that an alignment of all planets within an arc of about ninety degrees, called a synod, would so alter the mass center of the solar system that unusually heavy earthquake activity would result on Earth. Gribbin later disavowed this hypothesis. As it happened, the year 1982, when this conjunction of planets occurred, was quite ordinary in respect to earthquake activity. More recently Gribbin has picked up the work of two Chinese scientists, meteorologist Ren Zhenqiu and astronomer Li Zhisen, to assert that such synods of the planets would result in exceptionally cold winters.[2,3] This hypothesis is most likely false, and indeed the winter of 1982 was mild rather than severe. Again, however, Gribbin takes a speculative or dubious piece of legitimate research and hypes it as the last word in climatic change to prophesy doom and disaster.

Briefly, Ren and Li suggest that when the planets line up on one side of the sun their combined gravitational attraction will slow the earth as it moves away from them, and will speed the earth as it moves back toward them in the opposite half of its orbit. The combined effect, the two Chinese researchers calculate, may shorten one half of the year relative to the other by as much as 3.58 days. This amounts to lengthening one season at the expense of the opposite. If the synod occurs in the winter half of the earth's orbit (Northern Hemisphere), a consequence would be longer, and hence colder, winters and shorter, cooler summers.

The synods can be calculated to the day, and Ren and Li provide dates in the years 1126, 1304, 1483, 1665, and 1844 for the most recent

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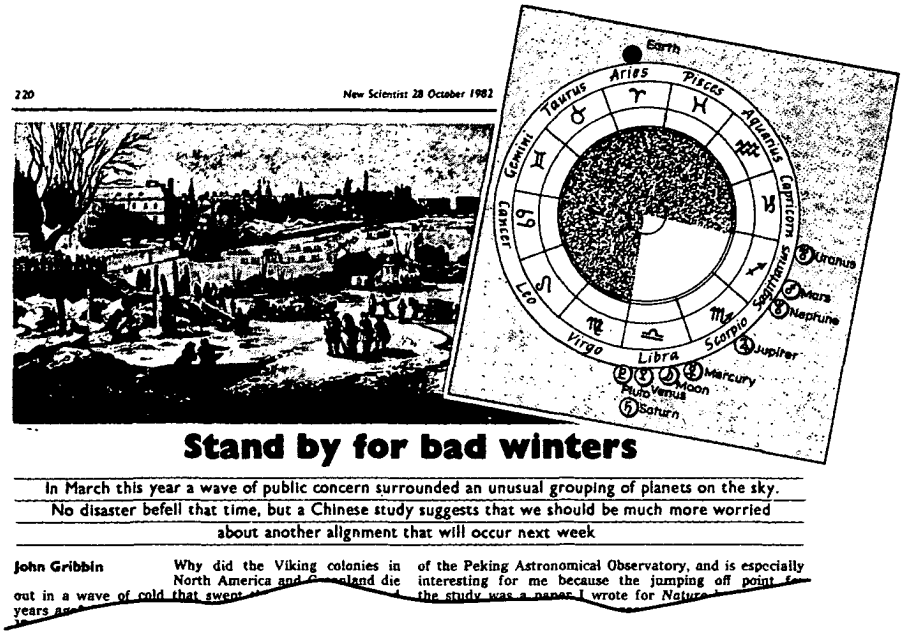


Portion of Gribbin article in *New Scientist* (Oct. 28, 1982)

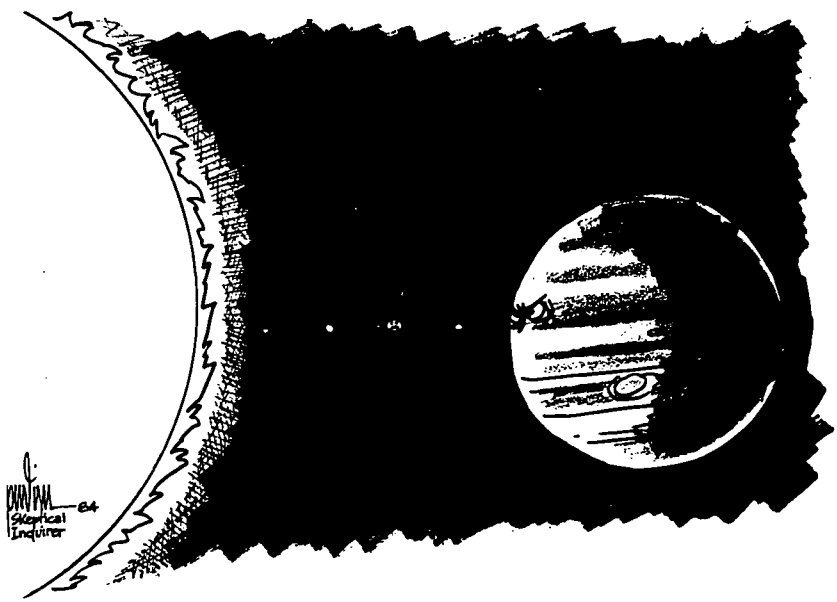
five before 1982. All these are in the winter half of our orbit. Because the large outer planets move much more slowly than the earth, the effect may build up slowly while earth traverses several orbits. Ren and Li think the altered seasons and their effect may persist for one or two decades. But there are problems with the astronomical and meteorological aspects of this argument.

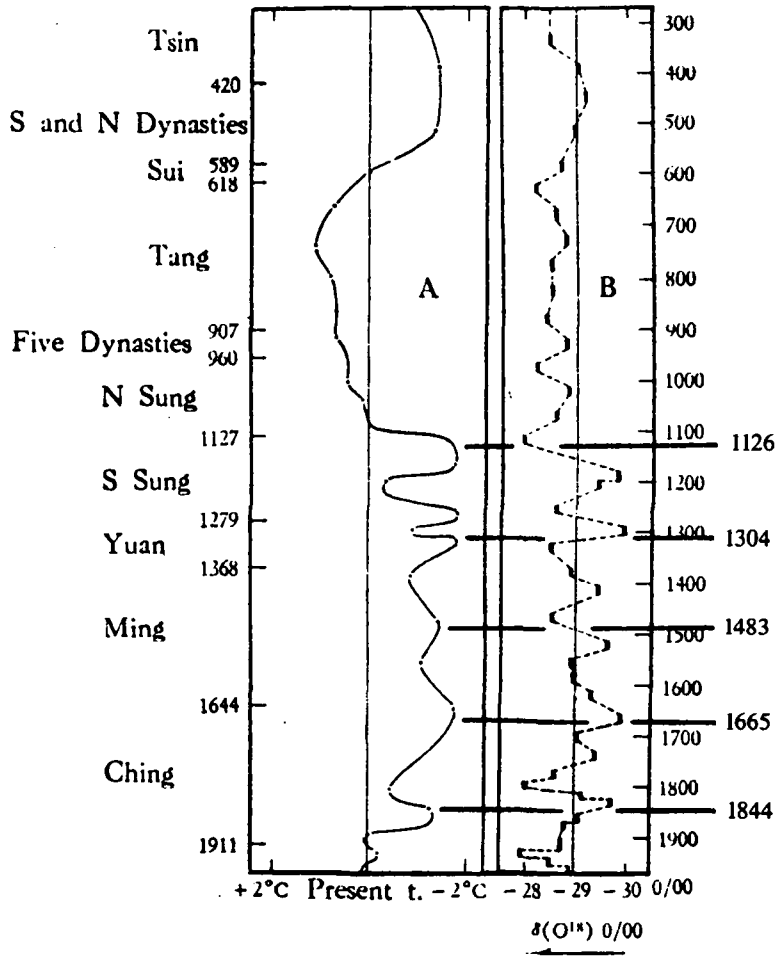
The hypothesis fails to appreciate the complete perturbation effects of the planets on each other and the rapidity with which gravitational attraction decreases with distance. When the planets are on the opposite side of the sun from the earth, their effect is at a minimum. The perturbation effect of Jupiter alone, when it is closest to the earth, is almost twice the gravitational pull of all planets when the earth is on the other side of the sun. Venus as well, when closest to the earth, has a maximum perturbation effect slightly larger than that of all the planets combined when they are on the opposite side of the earth from the sun. Venus and Jupiter together account for 80 to 90 percent of the perturbation effects. Venus, moreover, as an inner planet, moves more rapidly than the earth, and thus contributes only briefly and for less than a year to the synod effect.

Thus perturbation effects of the other planets on the earth's orbit occur constantly and are not necessarily at a maximum during a synod. It has been calculated that the maximum change in the length of the seasons as a result of these effects is on the order of 40 minutes rather than several days,[4] and that the pattern of seasonal disparities is complex.

The meteorological and climatic effects of a slight lengthening of the winter season are bound to be complex and not easily predictable. At present, the northern winter half of the year is seven days shorter than the southern because the earth passes perihelion in mid-winter (January 3) and then moves faster in its orbit. Being closer to the sun at that time of year, the earth also receives slightly more radiant energy from the sun. Yet the southern mid-latitudes have a milder winter climate than the northern.[5] The main reason must be sought in the greater extent of ocean in the Southern Hemisphere, which acts as an enormous heat reservoir meliorating the climate. The gradual movement of mid-winter away from perigee, known as the precession of the equinoxes, results in a slow reduction of the seasonal disparity. Over the course of a century this change in season length is greater than the maximum caused by perturbations and would thus mask the effect of the synod climate.

The Chinese researchers are satisfied that their calculated synods agree well with cold periods derived from historical descriptions by Zhe Kesheng.[6] These in turn agree with climatic curves derived from measurements of heavy oxygen isotope fractions in the ice layers of the Greenland ice cap. Figure 1 indicates that the synod dates do agree with the low temperature points of the Chinese historical data, but much less well with the climatic curve derived from Greenland ice. Both curves represent a trend averaged over periods longer than the decade or two considered relevant in the astronomical hypothesis. When we compare the five recent synod dates to a decade-by-decade historical record for England derived

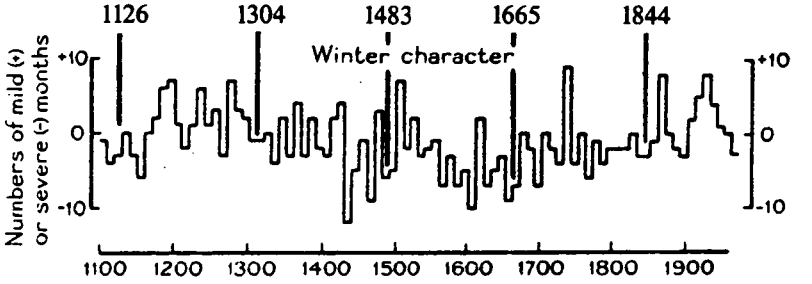




Source: Zhu Kezheng, p. 252 (see Note 6).

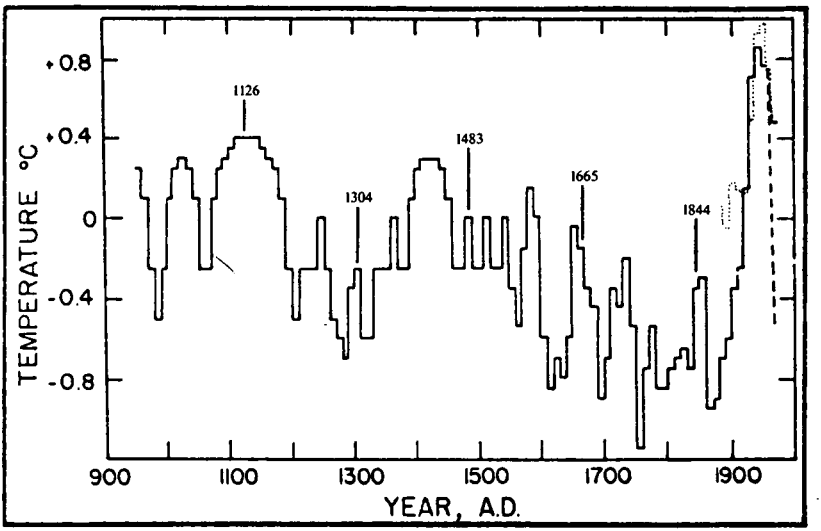
FIGURE 1. The trend of temperature fluctuations in the world during 1,700 years.

by Lamb[7] (Fig. 2) or to a decadal record of past climate for Iceland[8] (Fig. 3), the agreement is even less satisfactory. Clearly, these inferred records of past climates do not agree sufficiently with each other to pin a cold period on any short-term astronomical event. There is general agreement that Northern Hemisphere climate was warmer until sometime in the tenth to twelfth century, and colder until the nineteenth, with a remarkable warming during the twentieth. The historical data, however, do not show sufficient precision or agreement to conclude that the winters of this hemisphere march in lock step or dance together to an astro-



Source: Lamb, p. 440 (see Note 5).

FIGURE 2. Values of indices of winter mildness/severity in England each decade.



Source: Bergthorsson.

FIGURE 3. Decadal mean annual temperature in Iceland.

nomical drummer.

John Gribbin takes this highly speculative but perhaps reasonable analysis and turns it into quasi-astrological hype. His article "Stand by for Bad Winters" is replete with rhetorical questions ascribing such events as the death of the Greenland Viking colonies in the fourteenth century, fairs on the frozen River Thames in the seventeenth century, and annexation of Scotland by England in 1707 to synods of the planets. Gribbin also takes his speculations into a popular work, *The Weather Book,* complete with a woodcut of a Chinese sage and an etching of Russian peasants feeding their thatched roof to livestock during a famine. The moderately informed reader of popular science deserves better than this. He deserves a clear indication of the degree to which a hypothesis is established and the distinction between wild speculation and accepted conventional wisdom.

Notes

1. John Gribbin and S. Plagemann. *The Jupiter Effect* (London: Macmillan, 1974).

2. Ren Zhenqiu and Li Zhisen. "The Effect of Motions of the Planets on Climatic Changes in China." *Kexue Tongbao* 25 (May 1980): 417-22.

3. John Gribbin. "Stand by for Bad Winters." *New Scientist* 96 (Oct. 28, 1982): 220-23.

4. C. B. Archer. "Echoes of the Jupiter Effect." *Zimbabwe Science News* 17 (April 1983): 74-78.

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6. Zhu Kesheng (Chu Ko-chen; Co-ching Chu). "A Preliminary Study on the Climatic Fluctuations During the Last 5,000 Years in China." *Scientia Sinica* 16 (May 1973): 226-56.

7. Lamb, op. cit., vol. 2, p. 440.

8. Pall Bergthorsson. Paper presented at the NCAR-AFCRL Conference on the Climate of the 11th and 16th Centuries, Aspen, Colo., June 16-24, 1962; reprinted in Reid A. Bryson, *World Climate and World Food Systems III: The Lessons of Climatic History* (Madison, Wisc.: Inst. for Environmental Studies, 1974), p. 10.

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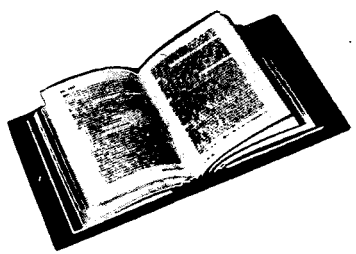

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Proving Negatives and the Paranormal

Is it really impossible to prove a negative, or is that often-heard statement merely a platitude that happens to be false?

Tony Pasquarello

BY THE VERY nature of their intellectual orientation, skeptical inquirers find themselves more often than not propounding and defending negative propositions, e.g., those that deny the existence of certain entities (ancient astronauts, Bigfoot, the Loch Ness monster) or deny the occurrence or validity of certain phenomena (dowsing, psychokinesis, telepathy). To those who level cries of "negativism" against such proponents, no retort is necessary, for the charge represents a mere emotive sentimentality, a longing for a bygone world of fairies and goblins banished from reality by the progress of science and philosophy. What is peculiar, however, is encountering the embarrassed, apologetic stance of the skeptics themselves in advancing negative propositions as though they believed themselves engaged in a rationally futile enterprise, jousting with rubber erasers against some eternal logical law carved in the very marble of the mind. Innumerable articles in atheist-humanist publications reveal this common sorry spectacle—argument after devastating argument against the existence of God followed by a few patronizing whimpers to the effect that ". . . of course, no one can prove a negative." At a recent Oberlin College debate between Duane Gish and Fred Edwords, editor of *Creation/Evolution,* I was astonished that, in the midst of demolishing Gish with a barrage of telling points, Edwords should suddenly volunteer

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the concession that "naturally, it's impossible to prove a negative." Then again, in a piece in the SKEPTICAL INQUIRER, Dale Beyerstein renders the traditional homage to this supposedly inviolable maxim by favorably citing the "truism that it is impossible to prove the nonexistence of something. . . ."[1]

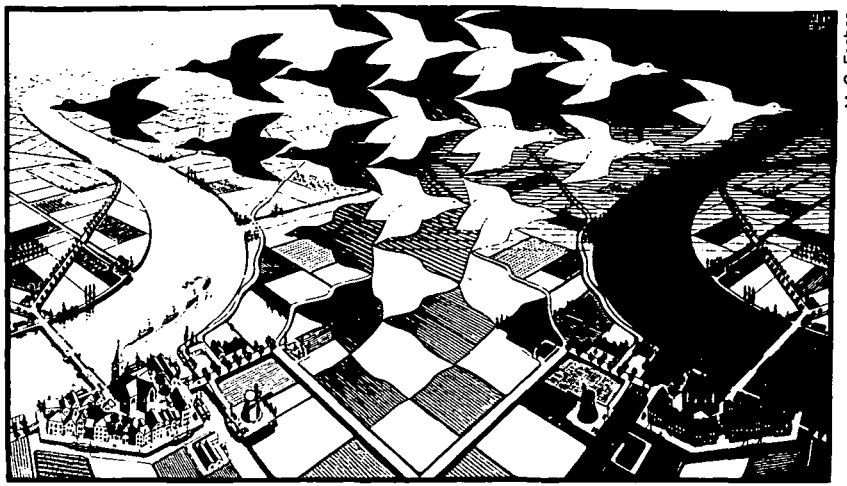
What's a Negative?

One wishes that Beyerstein had included some references supportive of this "truism." In fact, a check of the indices of some fifty formal and informal logic texts in my office, under the headings "nonexistence," "negatives, "proving negatives," etc., turned up absolutely nothing. Nor do any of the Aristotelian treatises on logic and rhetoric mention this "truism." A brief search of several encyclopedias and casual inquiries among colleagues—some of them logic specialists—likewise produced "negative" results. Gradually, there dawns a sneaking suspicion that the impossibility of proving a negative might be one of the universally accepted platitudes that unfortunately just happens to be false!

Proponents of the anti-negativist thesis (we can't prove a negative) have seldom been clear on just what is to count as a negative proposition. Are these only propositions containing "no" or "not," or also propositions containing "non," or indeed any term formed with an initial negative particle, such as "illiterate," "immoral," "irresponsible," etc.? What of exclusive ("only") or exceptive ("all but") linguistic structures whose function is partly negative? What of double or triple negatives?

Furthermore, is the anti-negativist thesis about *any* negative proposition ("Whales are not fishes") or specifically directed at negative *existential* propositions ("There are no mermaids")? It is perfectly plausible to maintain that *all* classical negative propositions are negative-*existential* ones since they all deny the possibility of finding a specified combination of attributes—"Whales are not fishes" is equivalent to "There are no whales that are fishes."

On the traditional characterization of negatives, it might be worth noting that: (1) Of the fifteen unconditionally valid syllogistic forms, ten have a negative proposition as the conclusion. Hence, at least these ten are "proofs of a negative." (2) All categorical propositions, affirmative or negative, have a logically equivalent but qualitatively opposite obverse form (e.g., for "All whales are mammals," "No whales are nonmammals"). Hence, if we can prove an affirmative—I hope we can do that!—we have also proved its negative equivalent. (3) The explosive development of logic in this century has rendered the distinction between affirmative and negative propositions almost wholly insignificant. It makes little difference whether our systematic apparatus for discussing the Shroud of Turin contains the term fake or authentic, for "fake" means "not authentic" and "authentic" means "not fake."



M. C. Escher

Proponents of the anti-negativist thesis (we can't prove a negative) have seldom been clear on *just what is to count as a negative proposition.*

Proving Nonexistence Simply

The most cursory of glances is sufficient to establish that there is no elephant in my bedroom and the same glance proves that there is a bed in the room. Slightly more rigorous inspection ascertains the nonexistence of a starlet in my bedroom. It might be quite arduous to show that there are no ants in the room, but it could be done. Indeed, it might be just as difficult to show that there *are* ants in the bedroom; it is possible that neither the negative nor the affirmative claim may be resolved until examination of that last cubic inch is complete. These simple and direct (unproblematic) cases of proving nonexistence contain some extremely important points.

1. When, in observing my bedroom, we see that there is no elephant there, we have *proved,* in all the appropriate logical and epistemological senses of that term, that there exists no elephant there. Thus the nonexistence of an elephant in my bedroom is beyond any reasonable doubt; it is known to be a fact; it is conclusively verified; it is absolutely certain; it is automatically believed by all those making the observation; and so forth. Furthermore, both commonsense practice and ordinary language usage agree that this is the pertinent way of proving that there is no elephant in my bedroom; as in most other cases, we look! (Look here, Aunt Millie. I'll prove to you that there's no intruder in your bedroom. We just looked in the closet; now let's look under the bed. See! No one here.) But, if looking proves the nonexistence of an elephant in my bedroom, it must be wrong (incorrect) to assert that it is "impossible to prove

the nonexistence of something." Since we do it all the time, it can be neither technically nor logically impossible to do.

And, as for its being the appropriate mode of proving nonexistence, consider how ludicrous it would be, in that context, to provide any laborious, didactic demonstration, deductive or inductive, of either the existence or nonexistence of an elephant in my bedroom.

2. "There are ants." "There are no ants." These assertions are perceived as logically odd precisely because no domain or realm is specified. Those purported ants produce an almost palpable itch to inquire, "Where?" In my kitchen? Garden? Bedroom? In the vast majority of existential claims, such a domain specification is explicit or implicit, often as an integral part of the entity characterization. Our grasp of the terms of characterization usually includes both *where* to look (the domain) and *how* to look (the type of entity). Thus, "No primes exist between 13 and 17" clearly specifies the domain and the type of search to be conducted—mathematical rather than empirical.

Descriptions and Domain

Part of the difficulty in assessing existential claims for paranormal entities is that in many, though not all, cases such claims are domain inspecific—"God exists"; "There are vampires"; "Spirits are real." And, because we inherit centuries, even millennia, of confused proliferation regarding entity descriptions—descriptions that are themselves massive accretions of speculation, fantasy, and invention—considerable fuzziness over domain is precisely what one would expect. Without a concrete physical presence providing a healthy check to fertile imaginations, is it any wonder that paranormal entity-descriptions just "growed like Topsy"? Everything—all proving or disproving, all verification or confirmation, all evaluation of affirmative or negative claims—everything depends on the clarity, completeness, constancy, and consistency of the entity-description. I cannot maintain that the Sears Tower is in Mansfield, Ohio, because the Sears Tower itself is *there* in Chicago, a spectacular restraint to the brashness of my thesis. But, were I to claim that mermaids have freckles, my speculation is as legitimate as any other, consistent with the defining properties of mermaids. Were my influence to be of considerable scope, "freckled" could become part of the lore of mermaids, eventually to be incorporated in the definition, as much a part of mermaid essence as "alluring" is now.

Difficulty and Inconsistency

The notion that we cannot prove nonexistence may really be a confused version of the thesis that verification of affirmative existential claims ("There are ants in the kitchen") requires only one positive instance, while examination of the entire domain is necessary to prove the negative ("There

are no ants in the kitchen"). Perhaps the germ of truth intended is merely that it is always more difficult to verify negative existential claims. Yet even this "germ" may turn out to be virulently misleading.

It is rarely acknowledged, or even noticed, that the confirmational difference between affirmative and negative existential propositions is wholly attributable to the fact that the former are *particular* while the latter are always universal with respect to the domain. So it is hardly surprising that one instance proves the affirmative claim since the claim *is* only that there exists at least one entity of the sort described. Universal propositions can be hard to confirm, whether affirmative or negative, because they do refer to the entire universe, either conceived literally as the physical universe or the planet Earth, or the universe of discourse or context—e.g., the room, the Loch, etc. In short, the affirmative–negative distinction is here irrelevant; what anti-negativism has failed to observe is that its claim is really about the particular-universal distinction.

In passing, we might note that if the entity-description involves an internal inconsistency (self-contradiction), then nonexistence is de facto proved. Indeed, this has often been the method of choice for many of the more infamous paranormal entities—e.g., God[2]—any two of whose attributes often appear to be, if not overtly, at least potentially inconsistent.

Even if we disregard the appeal to logical inconsistency, considerations remain that indicate a virtual parity between the verification of affirmative and negative existential statements. It is far easier to verify that there is no elephant or starlet in my bedroom than to verify the presence of an ant in the same room. Nor do we have to actually examine the entire domain to do it. For, when a consistent empirical existential claim contains a relatively clear and complete entity-description, ease of verification is seen to really be a matter of the size of the entity relative to the domain (scale), the number of objects in the domain (density), the similarity of the given entity to other objects in the domain (resemblance), and quite possibly other factors. I do not have to examine the entire bedroom domain (the closet, the dresser drawers, etc.) because, knowing the meaning of the term "elephant," I know that an elephant cannot fit into a closet or drawer; painstaking examination may be necessary to prove any proposition about ants.

Common sense harbors a bit of wisdom concerning verification; curiously enough, it concerns the verification of an affirmative proposition, not a negative one. It compares the difficulty of certain tasks to "looking for a needle in a haystack." It is hard to find a needle in a haystack, or to decide that there is no needle there; harder still to find a straw-colored needle; still easier to find a beach ball, or to confirm its nonexistence there. All these cases show that the simplicity or difficulty of verification has little to do with affirmative or negative, but rather with matters of scale, density, and resemblance.

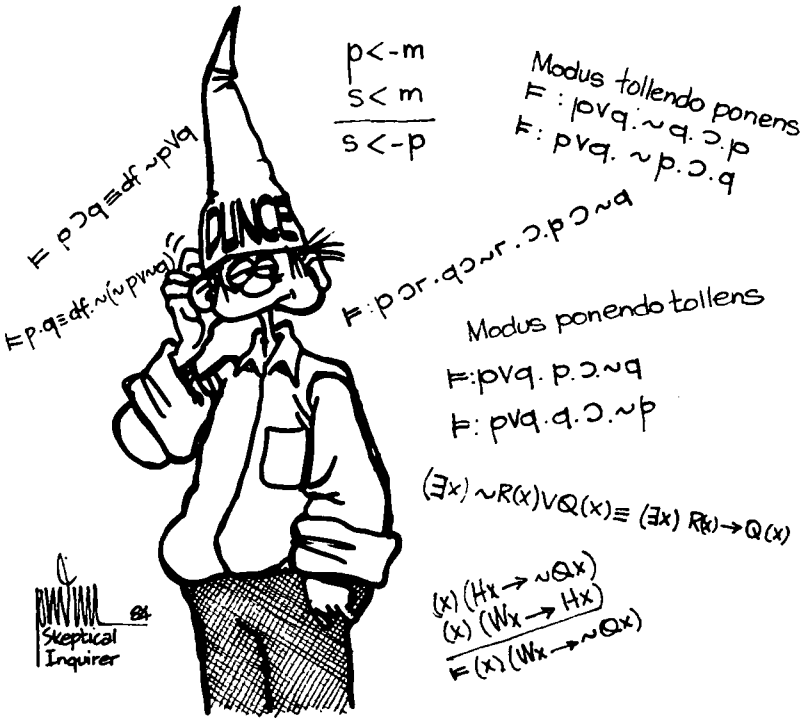
Let it be granted that nonexistence cannot be proved if the entity-

description is seriously lacking in clarity or completeness; but, then, neither can existence be proved under those conditions. Nonempirical entities tend to be metaphysically "skinny" critters; they can always be gratuitously inserted into any domain. That invisible little man who turns off the refrigerator light when the door is closed—can anyone prove that he's not there? Here, the proper response is to ask, How is an invisible, intangible, miniature man a *man*? Why not call the entity a marsupial, or a Martian, for that matter? And if the reply were: "Well it's not really a man in the usual sense, but still there really is an unspecified sort of something in some way in the refrigerator; you prove there isn't!" no responsible inquirer would feel any logical or moral obligation to answer the challenge. Here is the extreme case, a paradigm of the gradual evisceration of an originally substantial thesis (there's a man there) so as to render it immune to falsification (there's something there). When the entity is put on this stringent metaphysical diet, the resultant description is so thin as to be empty. Whose existence or nonexistence in the domain is to be proved?

When, however, a given characterization is not vacuous but is of sufficient content and clarity to be evaluated, but the domain itself is remote or inaccessible (the past may be construed as an inaccessible domain), then ordinary probability assessments are relevant and constitute the proof of either existence or nonexistence.

Inconstancy and the Nonmaterial

Description fuzziness, inconstancy, and domain inspecificity are subtle ploys evolved over centuries for ensuring that the nonexistence of an entity in a domain goes undetected. Chameleonlike pawns, paranormal entities are often shifted from sphere to sphere, from here to there, sometimes characterized as this, then later as that. Pity the poor language analyst attempting to trace out the complex entailments and family relations among a network of relevant concepts: "paranormal," "metaphysical," "nonmaterial," "nonempirical," "nonspatial," "spiritual," "mental," "domain-free," "universal," etc. Beware of any simplistic judgments concerning synonymy or implications among these; in truth, we simply do not know, in any comprehensive sense, what these terms mean. Numbers are nonmaterial, but surely not spiritual and perhaps not mental. Are they metaphysical? Universal? God claims a universal domain—he is characterized as "omnipresent"—yet even the staunchest believer might balk at saying that God is literally *in* the intestinal tract of a skunk, or a member of the series of natural numbers. The individual mind—notice that the mind is never characterized as "mental"—purported to be nonmaterial, seems oddly restricted to bodily quarters. My mind, alas, stays fairly close to this Italianate body, never liberated to go traipsing about the beaches at Nice or St. Tropez. Ghosts, poltergeists, and other assorted spirits are, of course, spiritual—Are they? Or are they composed of that wonderfully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Modus tollendo ponens
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Modus ponendo tollens
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⊢ (x) (Wx → ~Qx)
Skeptical Inquirer

ambiguous stuff ectoplasm?—yet exhibit a decided affinity for specific houses, crypts, and graveyards.

One particularly insidious aspect of muddled, shifting entity-descriptions involves the frequent switching from the physical to the spiritual, and back again, ad infinitum. The Christian deity is one such example.

The same ambivalence plagues the entire entourage of spiritual entities—angels, demons, ghosts, heaven, hell—all are normally classified as utterly spiritual, while at the same time exhibiting some surprisingly solid and substantial properties. A very large portion of the history of theological musings can be seen as the wide, often frantic pendulum swings between the spiritual and the physical. On the one hand, we have the quite understandable attempt to make nonstandard entities more "real" by providing them with matter or body. On the other hand, we see them—or their nonexistence—conveniently made detection-proof by the insistence that they are not only and not always physical. When the domain and entity-descriptions are sufficiently specific and coherent and domain inspection is possible, and when the inspection comes perilously close to proving that the entity simply does not exist, that elusive entity is given sanctuary in the realm of the "spiritual," thereby insulating it from apprehension.

Bigfoot proponents have learned all these lessons well, providing us with a contemporary sample of evasive maneuvers: In the treasury of

Bigfoot tidbits, often reported in the SKEPTICAL INQUIRER, that same pattern is manifest. To give the monster his due, Bigfoot has always been a sharply described creature favoring a quite definite habitat, the high country of the Pacific Northwest. But, since years of investigation and field study have produced nothing tangible, we come near to unmasking him as a fraud; we have almost proved his nonexistence. Voilà! The predictable reaction—reports of Bigfoot sightings in other states, particularly Ohio (how could he survive a Columbus summer?) and claims that he is so hard to spot because he is, after all, a hyperspatial being presumably capable of warping between different dimensions or universes.

The moral is surely evident. When in the course of scientific investigation we approach a point of wholly warranted justification in claiming that a certain entity does not exist, then champions of the entity simply enlarge, alter, or shift domains entirely, or change the entity-description, thereby protecting and perpetuating the entity's bare possibility.

Explanatory Hypotheses

A psychic surgeon performs seeming wonders, complete with an appropriate display of blood and guts (the excised tumor); an investigator duplicates the feat of digital dexterity, using a fake digit containing chicken innards, and suggests that this is how psychic surgery is really done. Hasn't the surgeon been unmasked?

A psychokineticist claims to move such objects as balanced pencils and dollar bills by the vibrations of his mind alone; an investigator[3] achieves the same results by wafting imperceptible puffs of air toward the objects. Doesn't this blow away the psychic's claim?

In each instance, the answer is a mixed one. Frequently, a fully explanatory, satisfying alternative hypothesis as to the true cause of the phenomenon in question is the best that we can practically obtain. Such explanations do constitute a form of disproof of the paranormal claim that might be termed "weak refutation." But alternative hypotheses are usually consistent with other hypotheses (always providing that each is fully explanatory), including the truth of the paranormal account itself.

Since the creation, formulation, and testing of hypotheses and their role in scientific methodology constitute the most difficult and intriguing set of problems in the philosophy of science, a detailed treatment can hardly be provided here that would cover all types of explanations. Those most prominent in discussions of the paranormal are *alternative* explanations—accounts of how a given event might have come about in a perfectly normal way; postulations of naturalistic causes for various sightings; ingenious scenarios providing plausible modes in which certain results might have been forthcoming without violating ordinary scientific laws. These hypotheses mirror, quite expectedly, the staggering diversity of the paranormal phenomena themselves. Some explanations are meant to account

only for *this* sighting, *that* event; others are broader in scope, purporting to be the explanation for *all* of a certain sort of observation or event. Naturally those that are most specified and restricted are the easiest to conclusively confirm and *do* rule out the paranormal, *for that observation.* "What you are now observing and take to be a flying saucer is really a street light on the opposite hill" is such a hypothesis, capable of complete, decisive confirmation. Also critical in evaluating the adequacy of hypotheses are the temporal parameters of the event—the question of whether it is current, past, or distantly past.

Lumping a very large number of diverse events under one heading, such as "UFO phenomena," can produce conceptual muddiness, for it is surely not the case that there is one and only one explanation for all UFO sightings. A wild assortment of hypotheses, including weather balloons, inversion effects, the planet Venus, advertising planes, swarms of luminous insects, experimental aircraft—not to mention those many other explanations based on the psychological state of the subject[4]—has been advanced to account for UFOs, and there is little doubt that each is the correct explanation for some subset of the sightings and that collectively they may well account for all the sightings. Nevertheless, little green extraterrestrials may have been circling the earth in flying saucers for these past fifty years and could be there now. Alternative hypotheses do not eliminate the paranormal account and, unless the entire stratosphere can be monitored with a far greater efficiency than we now do the U.S.-Mexican border, there cannot be strong refutation of flying saucers.

Here, the immensity of the domain bars direct inspection and strong refutation. In the case of ancient astronauts, the inaccessibility of the remote past is the prohibitive factor. In both cases, alternative explanations account for all the sightings or alleged evidence, while the aforementioned probability assessments—where the primary negative exponent will be those vast, incomprehensible interstellar distances—establish the improbability of extraterrestial visitors, ancient or modern.

Weak refutation often appears to be conclusive because there is a natural tendency to supply those intuitive principles that, taken together with the explanatory hypothesis, strengthen the refutation to near-deductive limits. Those tacit additional assumptions are the familiar ones: among others (1) Occam's Razor—the simplest explanation is the correct one; (2) Naturalistic Commitment—the explanation within the bounds of known natural law is correct; (3) Uniqueness of Causes—for any given type of event, sufficiently specified, there can be only one cause. Joe Nickell's brilliant replication of all relevant Shroud characteristics by rubbing and daubing bas-reliefs, using only fourteenth-century techniques and materials, is a splendid example of such an attractive alternative hypothesis.[5] Nickell's enthusiasm is so contagious, and his achievement so remarkable, that we unwittingly make those imperceptible inferential leaps from "it could have been made in this way" to "this is the only way it

could have been made" and thence to "this is how it was made." But it must be emphasized that the Nickell hypothesis does not of itself eliminate other explanations, not even the one including that infamous "burst of spiritual radiant energy" at the moment of Resurrection.

No, the "fake thumb" explanation does not prove that the psychic surgeon is not operating paranormally, but films of the "surgeon" using a fake thumb *do*—and such films exist. And, while the "blowing" hypothesis does not prove that James Hydrick is a fraud, Hydrick's own admission that blowing is his modus operandi most decidedly does![6] Here are wonderfully clear examples of the contrast between weak refutation (alternative hypotheses) and strong refutation. I would venture the suggestion that part of the motivation for anti-negativism is the fascination with and concentration on alternative explanations, coupled with the perception that weak refutation is indecisive because alternative explanations do not prove that a given entity does not exist. In this perception, anti-negativism is entirely correct. We cannot prove a negative, or nonexistence, *in that way,* but it is fallacious to spring to the generalization that we can never prove a negative; in addition to weak refutation, strong refutation is often viable. Explanations in terms of a peculiarly shaped new waterbed and dark-gray designer bedding may explain prior elephant sightings in my bedroom but do not prove that there is no elephant there. However, to reiterate an opening point, *looking does.*

Conclusion: The Loch Ness Monster

Most of the issues raised here can be illustrated, and perhaps clarified and unified, by a summarization in terms of the Loch Ness monster. Here is one paranormal question that many believe has the best chance of being decisively settled in the near future. Our analysis shows why this is so.

The Loch Ness creature is really a modern phenomenon stemming from the early 1930s, there having been only ten or so dubious observations prior to that time. Luxuriant imaginations have not had time to flower out of control, a circumstance favoring a rather stable and clearly defined entity-description. Nor does there appear to be any internal logical inconsistency: the creature is a quite possible one. Never has a serious breath of nonempirical or nonmaterial scandal touched the creature; whatever its specific nature, it has always been characterized as a very solid, fleshy being. Thus the creature scores well on consistency and completeness, clarity and constancy of description.

As for domain, the loch is a nicely circumscribed, virtually closed domain, rather large in volume but relatively small, since the creature is also rather large and estimates of number would range from a minimum breeding population to perhaps 200 or 250 animals. This restricted domain means that, unlike Bigfoot, the creature cannot wander off to be reported elsewhere. Other monsters are reported in other lochs, but they are *other*

monsters. The criteria of scale and resemblance also tend to favor ease of confirmation or disconfirmation—several large animals that don't look much like anything else in a reasonably confined area. And the loch is accessible and easily reached. Basically the only hindrances to confirmation are the great loch's depth in spots (up to 700 ft.) and the turbidity of the water due to enormous quantities of suspended peat particles. Both tend to make visual examination difficult; but then Loch Ness is not the Marianas Trench.

Scientists have compiled an impressive mass of ecological information concerning Loch Ness, forming a solid data base from which to calculate the possibility that a specific candidate is, in fact, the monster. For, if we know, say, the predatory habits or temperature limitations of a certain sort of animal, and we also know the temperatures and food supplies in the loch, then we can make responsible probability estimates as to whether that animal is the Loch Ness monster. For example, just such calculations produce high probability rankings for amphibians and thick-bodied eels, and low rankings for reptiles.

But in addition to probabilistic speculation, the loch provides a fertile field for the generation of alternative hypotheses. From ducks to otters, fishing birds to fishing boats, vegetation mats to gas bubbles, there has been no shortage of explanations. Perhaps the best among these, for sheer brilliance and scientific perspicaciousness, is that of Robert Craig.[7] He suggests that Scots Pine trees, plentiful about the loch, die, sink to the bottom, and form resin-covered watertight logs. Eventually, decomposition produces internal gases that form blisters at the truncated limb ends and cause the log to rise to the surface. The blisters burst, the log is propelled, swims, fizzles—mimicking all monster movements and appearances—then sinks again to its watery grave: Another monster sighting is recorded. Yet, having created a virtually perfect alternative explanation, Craig, in his justifiable pride, tends to overstate the import of weak refutation: "All that is needed to confirm this highly plausible hypothesis is to dredge the bottom for blistered logs."

We may well inquire, What hypothesis? That the monster does not exist? That the monster really is blistered logs? Strictly speaking, if we find these logs, that only confirms the theory that there are blistered logs in the loch. Craig forgets that there might be as many fetching blistered logs as you like performing their hydrodynamic ballet, Swan Loch—or is it Swan Log?—and there might be Nessie, an actual aquatic animal, playfully swimming alongside.

So much for probability estimates and weak refutations. Finally, can there be strong refutation? Can we prove that the Loch Ness monster does not exist? (And this particular "can" is more than bare logical or even empirical possibility; "can" here means practicality or feasibility.) Why of course we can! We can drain, strain, or seine the loch. Or, more pragmatically, we can devise any number of scientific technologies that amount to

the same thing—the functional equivalent of examining every portion of the domain capable of containing a creature of that description. This, after all, is what a number of Loch Ness research teams have been doing for years, and their tools—sonar, submersibles, cameras, and microphones—are simply devices for examining the domain. It makes no difference whether we describe their efforts as trying to find the monster or trying to prove there is none, for these are, as we have insisted, two sides of the same coin.[8]

To say that something exists is really to say that certain properties that we ordinarily take to be important, essential, defining, or "core" properties can be found *in combination.* Since we never find the upper-half of a woman combined with the lower-half of a fish, we say that there are no mermaids. Two of the central characteristics of the Loch Ness monster are, at least, that it is an animal and that it is big. A log is big, but not an animal. A duck is an animal, but not big. Yes, we may find items that have been taken to be, or mistaken for, the creature. But if thorough examination of the domain does not discover the proper combination of characteristics, then we have proved that the monster does not exist. And, in so doing, have another confirming instance of what deserves to become the new, and this time, authentic truism: "It is always possible to prove the nonexistence of something."

Notes

1. Dale Beyerstein. "Skepticism, Closed-Mindedness, and Science Fiction." SKEPTICAL INQUIRER (Summer 1982).

2. The interface between religion and the paranormal is so rich and so obvious that no apology is needed for classifying the Deity as a paranormal entity. If the Shroud, exorcism, spirits, spiritualism, reincarnation, miracles, and gods, tribal or Olympian, are all paranormal issues, then so is the existence of God.

3. In both cases mentioned, at least one investigator was the redoubtable James Randi.

4. It could be helpful to divide alternative hypotheses into objective and subjective—the former based upon actual, but misinterpreted, external events; the latter emphasizing alterations in the perceptual state due to drugs, stress, etc.

5. Joe Nickell, "The Turin Shroud: Fake? Fact? Photograph?" *Popular Photography* (Nov. 1979). See also his *Inquest on the Shroud of Turin* (Buffalo, N.Y.: Prometheus Books, 1983).

6. James Randi. " 'Top Psychic' Hydrick: Puffery and Puffs." SKEPTICAL INQUIRER (Summer 1981).

7. Robert P. Craig. "Loch Ness: The Monster Unveiled." *New Scientist* (Aug. 5, 1982).

8. Most of the information on Loch Ness is taken from the definitive work: Roy P. Mackal, *The Monsters of Loch Ness* (Chicago: Swallow Press, 1976). ●

Book Reviews

Gullible's Travels in Psi-Land

Mindwars: The True Story of Secret Government Research into the Military Potential of Psychic Weapons. By Ronald M. McRae. St. Martin's Press, New York, 1984. 192 pp. $12.95

Philip J. Klass

THE BOOK JACKET reads: "Did you know the government is spending tax dollars on projects like 'Madame Zodiac' and the 'First Earth Battalion'? What is the 'psychic howitzer' and can it really blast missiles out of the sky? In this controversial book, Ron McRae documents the incredible story of official research into the military uses of parapsychology. Using interviews with confidential inside sources along with recently declassified documents, he reveals the suppressed results of long-term top-secret research into telepathy, clairvoyance, and psychokinesis carried out by the Navy, the CIA, and the nation's most prestigious research institutes. Whether or not you believe in the powers of parapsychology, you'll be convinced that *Mindwars* holds profound implications for the future of warfare, science and mankind."

This book convinced me that, if the government opted to sue the publisher under the truth-in-labeling laws, it would win its case handily, even allowing for the customary "hype" of book jackets.

The well-known columnist Jack Anderson, who wrote the book's introduction, offers useful background on the author: "Ron McRae knows investigative journalism from inside and out. For several years, he was one of those 'unauthorized sources' within the government I have always depended on. In 1979, he came in from the cold and joined my staff as an intern. Since then, he has become one of the best investigators in the business." This may be true by Anderson's standards, but not by mine.

Philip J. Klass is a member of CSICOP's Executive Council and chairman of its UFO Subcommittee.

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FALL/WINTER 1976 (vol. 1, no. 1): Dianetics *by Roy Wallis.* Psychics and clairvoyance *by Gary Alan Fine.* "Objections to Astrolgy" *by Ron Westrum.* Astronomers and astrophysicists as critics of astrology *by Paul Kurtz and Lee Nisbet.* Biorhythms and sports performances *by A. James Fix.* Von Däniken's chariots *by John T. Omohundro.* ($7.50)

As an unpaid intern trying to become an Anderson-type investigative journalist, McRae covered the State Department and the Middle East, and occasionally such things as Pentagon cost-overruns and nuclear weapons. McRae claims he ignored rumors of a top-secret "psychic task force," alleged to operate in a heavily guarded room in the Pentagon basement as well as reports he heard of an Army plan to train "psychic warrior monks."

In late 1980, his outlook on psychic warfare changed drastically, according to McRae, when he read an article on the subject in an Army magazine, *Military Review*, authored by a Lt. Col. John B. Alexander. Although the spoon-bending feats of Uri Geller and others already had been exposed by James Randi as trickery, Alexander suggested the "most likely explanation for this phenomenon is that the subject is mentally generating an electromagnetic force capable of distorting or rupturing the target object. The existence of such a force has been established through the Soviet-developed means previously described as Kirlian photography." Yet, by the time that Alexander wrote his article, it already had been demonstrated that the "aura" that shows up in Kirlian photography is simply a well-understood corona phenomenon.

McRae showed the Alexander article to another member of Anderson's staff, prompting the latter to respond that "a trusted CIA source" had recommended another article authored by a retired Army officer, Thomas E. Bearden, titled: "Soviet Psychotronic Weapons." In this article Bearden claimed that "Legionnaires' Disease" was being induced by the Soviets using a "photonic barrier modulator."

Bearden also claimed that the Soviets could sink a U.S. submarine simply by focusing psychic energy on a *photograph* of the submarine, using a "hyperspace amplifier," and that this had caused the mysterious loss of the USS *Thresher*.

Still another Bearden claim recounted by McRae is that the Soviets have a "psychic hyper-spatial nuclear howitzer" that can beam nuclear weapons at many different targets around the world simultaneously.

Seemingly impressive tales of this type prompted Anderson to publish two columns on psychic warfare in early 1981, crediting "my associate Ron McRae." Soon an agent was circulating McRae's outline of a proposed book on psychic warfare. *Mindwars* is the result.

McRae's book claims that the Navy, understandably eager to keep track of Soviet missile-launching submarines, turned to "psychics" and palm readers and employed "at least 34 psychics" for this purpose.

One, in Washington, D.C., whom McRae calls "Madame Zodiac" (a pseudonym), allegedly was visited "every third Tuesday" during an 11-month period in 1979-80 by a Navy commander to get her assessment of the location of Soviet submarines "off the eastern coast of the United States." (Apparently her psychic powers were not powerful enough to reach the West Coast.)

According to one of McRae's unnamed "inside sources," the Navy paid Madame Zodiac a paltry $400 a month for her invaluable information. One might expect an investigative reporter to question why the Navy would only update its submarine surveillance once every three weeks instead of daily or hourly. But this did not arouse McRae's suspicion.

One of the psychics allegedly used for this purpose who was willing to be identified is Shawn Robbins, who, McRae points out, is rated as one of the nation's ten top psychics by the *National Enquirer*—obviously a preeminent

authority. McRae quotes Robbins as saying she did very well not only in determining the position of Soviet submarines but also in forecasting their future movements. Naturally the Navy was anxious to conduct further tests, but Robbins said she declined because of a previous commitment to hunt for treasure in Greece.

Seven years later, McRae reports, the same Navy officer again contacted Robbins, but she was not hired. The reason: "Although Robbins scored well, reductions in the Reagan budget cut her out of the program." This ignores the very significant increases in the Defense Department budget under Reagan. If Robbins and other psychics were as successful as McRae implies, the Pentagon should be able to find a few thousand dollars in its nearly $300 billion budget.

Lest readers doubt the ability of psychics to perform such miracles, McRae cites their work with law enforcement agencies in (allegedly) helping to solve crimes. For instance, he quotes one New Jersey police chief as saying that Peter Hurkos had furnished "a preponderance of leads that were not obtainable with conventional investigative techniques." McRae describes Hurkos as "the Dutch 'Radar Brain Man,' legendary for his psychic aid to the anti-Nazi underground during World War II."

Not until 33 pages later does McRae inform his readers that these claims are simply figments of Hurkos's vivid imagination, according to a careful investigation conducted by a respected Dutch journalist, Piet Hein Hoebens.

One of the book's seven chapters is devoted to Project Scanate—a remote-viewing experiment conducted in 1973-75 by Russell Targ and Harold Puthoff, scientists employed by SRI (formerly Stanford Research Institute), ostensibly under Central Intelligence Agency sponsorship. McRae characterizes Project Scanate as "an impossible test with impossible results. . . . Puthoff, Targ, and the psychics won."

McRae's account of the experiment is taken principally from the Puthoff-Targ book *Mind Reach,* and from an unnamed man, allegedly employed by the CIA, who monitored the test. As McRae describes the test, "CIA headquarters personnel would select a pool of potential targets all over the world, including secret sites in the United States, the Soviet Union, and the People's Republic of China. Another headquarters group would . . . randomly select the targets . . . from the pool." The target's latitude and longitude would be given to a test subject who then reported what he/she perceived at that location. For target areas in the USSR and China, spy satellite photos later were obtained to check the accuracy of details supplied by the test subject, according to McRae.

He reports that one day Puthoff gave test-subject Pat Price the coordinates of a facility about 135 miles southwest of Washington, D.C., and that three days later Price delivered a five-page report of his perceptions "beginning with a description of the area from an altitude of 1,500 feet and ending with a tour through building interiors . . . with descriptions of equipment, names from desks, and—just to show he was serious—a list of a dozen labelings on file folders locked in a file cabinet." The file-folder labels included such names as Cue Ball, Four Ball, Eight Ball, Rackup, and Side Pocket. According to McRae, "Three weeks later, the CIA informed him [Puthoff] that Price was right. Exactly right."

Not until ten pages later in the book does the reader discover that Price was grossly in error! Science writer John Wilhelm, with a long-standing interest in parapsychology, obtained the geographic coordinates of the "secret facility" 135

miles southwest of Washington. Using suitable maps, he visited the location with three other persons. What Wilhelm found, as he reported in an article in the Aug. 7, 1977, edition of the *Washington Post* (quoted by McRae) was "a sparse hillside, a few flocks of sheep, and lots of droppings. No 'underground storage areas,' no 'computers, communications equipment' or 'Army Signal Corps' personnel as reported by Price."

Yet McRae concludes that "Price certainly zoomed in on some secrets, and his description does fit an area at NSA's [National Security Agency's] Fort Meade, Maryland, headquarters." McRae does not inform his readers that Fort Meade is about *30 miles northwest of Washington, not 135 miles southeast.*

McRae adds: "The subjects zeroed in on hundreds of coordinates, not just the mysterious communication center, and indisputably got most of them right. Those successes can't all be written off as recording errors." But McRae himself never checked any of the other targets and accepts it on faith that the test-subjects "indisputably got most of them right."

The author rarely quotes his "inside sources" by name. One of the few exceptions is Barbara Honneger, whom he describes as a "former Reagan White House aide." He quotes Honneger as saying that "the National Security Agency is testing remote viewing on NSA's primary job, breaking codes." Honneger's position, before she quit in mid-1983, was project director of the Attorney General's Gender Discrimination Agency Review—a position that hardly would have given her access to any secrets about the sensitive NSA and its code-breaking activities.

The final chapter of McRae's book begins: "In my proposal to my publisher for this book, I had grandiose plans for this last chapter. I promised a 'how-to' guide to detecting frauds and charlatans, the final word on the validity of parapsychological research, and a call for congressional hearings on psychic warfare."

McRae subsequently decided to abandon his lofty plans. But, he says, "I've learned my method for detecting frauds and charlatans does not depend so much on my great mind as the seat of my pants. The method, in fact, requires only a sentence—people who agree with me speak the truth, and those who disagree are frauds and charlatans. I haven't found a better method. An investigative reporter needs an instinctive sense of truth, or needs to believe himself so gifted, or at least needs to learn to bludgeon contrary voices into silence. I like to think of myself as gifted, although I do know how to bludgeon the opposition."

This curious McRae philosophy of investigative reporting is reflected in the contents of his book. But a more accurate title for the book would be: "Gullible's Travels in Psi-Land." •

James Randi, who was interviewed for Mr. McRae's book, asked that we append the following note to Phil Klass's review.—ED.

I will address myself only to statements that McRae makes in his book concerning my own statements about paranormal research. There is little if any truth in the direct quotes he attributes to me, and he misrepresents entirely certain aspects of the McDonnell Laboratory research involved in the Alpha Project. For him to claim that Dr. Puharich actually constructed a "tooth radio" that is used by stage magicians is ludicrous, and I in no way "persuaded Geller's stage assistant to

confess"; nor did I ever find "a magnet concealed in Geller's hair." There are numerous other misstatements in the book, to which I will address myself at a later date.—*James Randi*

Some Recent Books

Brandon, Ruth. *The Spiritualists: The Passion for the Occult in the Nineteenth and Twentieth Centuries.* Alfred A. Knopf, New York, 1983. 315 pp. $16.95. Thoroughly researched, insightful, and valuable history of spiritualism (the forerunner to today's "parapsychology") in America and England. Reviewed in our Winter 1983-84 issue.

Doyle, Rodger Pirnie. *The Medical Wars.* William Morrow and Co., New York, 1983. 272 pp. $13.95. A responsible and clear-headed look at a bevy of modern medical controversies. In contrast to the many books that tout the latest health fads, this one casts the cold light of scientific reason and scientific method onto the subjects. Doyle begins with a four-chapter section on the "Rules of the Game," in which he deals with the hierarchy of evidence ("Why Some Facts Are More Potent than Others") and the rules of evidence ("How Medical Controversies Are Judged"). He then applies these principles in sober, readable form to 16 medical controversies, including food additives, orthomolecular medicine, laetrile, low-level radiation and cancer, and fluoridation. With an introduction by Stephen Barrett, M.D., whose own book, *The Health Robbers,* this one nicely complements.

—K.F.

Articles of Note

Bartel, Dennis. "Who's Who in Gurus." *Harper's.* November 1983, pp. 50-56. A nostalgic look at the gurus of the Aquarian Age. "Who were those men leading the chants?"

Budiansky, Stephen. "Creationism: Still in Evidence in Texas." *Nature* 306:528-29, Dec. 8, 1983. News report on the latest Texas schoolbook controversies.

Bunge, Mario. "Speculation: Wild and Sound." *New Ideas in Psychology* (Pergamon), vol. 1, no. 1 (1983):3-6. Speculation is an essential part of science, but what distinguishes wild from sound speculation? Philosopher of science proposes criteria for *sound* speculation: (1) the hypothesis is

compatible with the bulk of scientific knowledge and (2) it can be refuted or confirmed (to some degree) by observational or experimental means. He contrasts this with Paul Feyerabend's contention that there is no distinction between sound or wild hypotheses or even between science and nonscience. Followed by an approving commentary by philosopher Thomas Nickles.

Estling, Ralph. "Frail the Wand, Profound the Spell." *New Scientist*, Dec. 15, 1983, p. 835. Little essay on the characteristics that distinguish English magical beliefs from American ones. Estling lists 24 topics where interest is largely American (including psychic photography, biorhythms, creationism, diet fads, present-day dinosaurs in Africa, "organic" food), seven that are mainly English (ley lines, belief in fairies, Rupert Sheldrak), and 17 where mystical faith is largely equal (including ESP, astrology, and UFOs as extraterrestrial spacecraft). Noting, for example, that England has no UFO abduction stories while America is replete with them, Estling decides that Americans "want to get personally involved in, committed to, their obsessions," while the English are inclined toward "aloof goofiness . . . they are eccentric observers." Americans also have a fascination with gadgets. An English paranoid schizophrenic, says Estling, is content in the knowledge that someone is trying to poison him; his American counterpart is more likely to believe he is "being manipulated by electronic beams emanating from very complicated and whirring mechanical devices. . . . National character rules even the mystic mysteries, even our deepest mental pathologies."

Gordon, Henry. "Debunking Psychic Myths." *Toronto Star*, Nov. 12, 1983, p. B6. Coverage of CSICOP's conference on "Science, Skepticism, and the Paranormal," with emphasis on error and fraud in ESP experiments.

Gould, Stephen Jay. "A Reply to Critics." Chapter 17 (pp. 227-40) in Gould's *Hen's Teeth and Horse's Toes* (Norton, 1983). The only chapter in this book that has not earlier appeared as a Gould column in *Natural History*, this is a detailed response to critics of his column "The Piltdown Conspiracy" (is reprinted in the book), which proposes that Teilhard de Chardin was an accomplice in the hoax.

Greenberg, Daniel S. " 'Psi' R&D: Congress Gets Favorable Report" and " 'Metal-Bending Parties' Draw High Government Brass." *Science & Government Report*, Oct. 1, 1983, pp. 1-3. Account of a pro-psi report by the Congressional Research Service. See News and Comment, this issue. The "metal-bending" sidebar describes an informal network of government employees seriously interested in psi research who now and then get together at "metal-bending parties."

Harris, Byron. "The Big Con." *Texas Monthly*, September 1983, pp. 129 ff. Lengthy and lively investigative report on inventor-promoter Eugene Anderson and his "Chemical Reactor Block," which was supposed to dissociate water into hydrogen and oxygen without using outside energy. The invention was supposed to realign geopolitical balances and make investors rich, but it was all a con job. Followed by a sidebar by John Schwartz, "Pros at Cons: Texas' Hall of Flimflam Fame."

Hope, Jack A., and Ivan W. Kelly. "Common Difficulties With Probabilistic Reason." *Mathematics Teacher* 76(8):565-70, November 1983. Article on

origins of fallacious thinking about probability notes common mistakes. Examples: "People are unaware that everyday expressions of probability are highly ambiguous." "People believe that the prediction of an independent event cannot be detached from the outcomes of similar events in the past." "People have undue confidence in the reliability of small samples." "People . . . confuse the categories of 'unusual' events with those of low-probability events." "People have difficulty estimating the frequency of many salient or memorable events." Relevant to evaluation of paranormal claims.

Joyce, Christopher. "Now You See It, Now You Don't." *New Scientist*, Nov. 17, 1983, pp. 523-24. Coverage of CSICOP's conference on "Science, Skepticism, and the Paranormal," with emphasis on critical appraisals of parapsychology and on Project Alpha's James Randi, Steve Shaw, and Michael Edwards.

Kanekar, Suresh. "Parapsychology: Fact, Fiction, or Fraud." *Science Today* (India), October 1983, pp. 35-40. Hard-hitting critique of parapsychology by a University of Bombay psychologist.

Kelly, I. W., and James Rotton. "Geophysical Variables and Behavior: XIII. Comment on 'Lunar Phase and Accident Injuries': The Dark Side of the Moon and Lunar Research." *Perceptual and Motor Skills*, 57:919-21 (1983). Evaluates a 1982 paper claiming an excess number of injuries on nights of a full or new moon. Shows that the claim is based upon trivial differences, overlapping observations, possible violations of statistical assumptions, the possibility of an effect due to darkness on new-moon nights, and failure to consider confounding between phases of the moon and days of the week over short periods of time.

Laurence, Jean-Roch, and Perry Campbell. "Hypnotically Created Memory Among Highly Hypnotizable Subjects." *Science* 222:523-24, Nov. 4, 1983. Thirteen of twenty-seven research subjects to whom a pseudomemory was introduced during hypnosis stated afterward the event had actually occurred. See News and Comment, this issue of *SI*.

McDonald, Kim. "Research on Psychic Phenomena: Science or Pseudoscience?" and "Group of Skeptics Seeks to Alert the Public to Claims that Lack Scientific Support." *Chronicle of Higher Education*, Nov. 9, 1983, p. 14. Coverage of CSICOP's conference on "Science, Skepticism, and the Paranormal."

McGuire, John M. "Is She Psychic? Or Is She a Fake?" *St. Louis Post-Dispatch*, Nov. 27, 1983, p. 3C. Lengthy profile of Illinois "psychic" Greta Alexander differs from most such features by including fairly detailed critical commentary, in this case from Ray Hyman and Paul Kurtz. Still the balance of space is tipped toward Greta's claims.

"Now the Story Can Be Told! How Tabloids Survived the Recession." *Business Week*, Nov. 7, 1983, pp. 145-46. Report on the economics of the four supermarket tabloids that had the greatest growth in newsstand circulation among all U.S. magazines in 1982. The *National Enquirer's* revenues rose 54%, the greatest increase of any U.S. magazine. The headlines sell ("I Sold My Baby to UFO Aliens"), but the tabloids have also become savvy marketers and promoters.

Remy, Holly D. "Debunker's Analysis of Tape Finds Psychic's Predictions Un-

Phenomenal." *The Magazine, Buffalo (N. Y.) News*, Oct. 30, 1983, pp. 12-13. A reporter took a tape recording of a "psychic reading" to SUNY-Buffalo psychologist Irving Biederman for his comments. Biederman explains step by step how the "psychic" was operating and shows how no special powers were involved. There follows an excerpt from Ray Hyman's article on "Cold Reading" from the SKEPTICAL INQUIRER (then *The Zetetic*), vol. 1, no. 1. The reporter's article is actually a sidebar to a more general article on Buffalo-area psychics. It is a fairly good way to present the scientific perspective about so-called psychics to balance out an otherwise merely descriptive and therefore misleading approach.

Souter, G. N., and J. R. Weaver. "Biorhythms and the Incidence of Industrial Accidents." 1983. (Available from Department of Industrial Relations, University of Western Australia, Nedlands, Western Australia 6009, Australia.) Paper on a study to determine whether or not there was a relationship between biorhythm critical days and the incidence of industrial accidents in a blue-collar work-force. The results suggested no relationship even when biorhythm critical days were measured in a variety of ways.

"The Texas Textbook Censors: Bad for the Image." *Discover*, January 1984, p. 6. Skeptical Eye column urges Texans to get rid of their board of education's "no-nothing guidelines for textbook publishers" that encourage omission of treatment of evolution.

"The Twilight Zone." *Discover* (Skeptical Eye column), September 1983,. p. 8. Brief look at the supermarket tabloids, whose coverage of science and medicine "does not merely border on the irresponsible. It adds new dimension to the term."

Zamulski, B. E., and I. W. Kelly. "Probability and the Origin of Life." *Humanist in Canada*, Winter 1983-84, pp. 25-27. Conceptual critique of the creationist probability arguments.

—*Kendrick Frazier*

From Our Readers

The letters column is a forum for views on matters raised in previous issues. Letters should be as brief as possible. They should be typed and preferably double-spaced. Letters are subject to editing for space and clarity. Not all of those submitted can be published. Address letters to: Editor, THE SKEPTICAL INQUIRER, *3025 Palo Alto Dr. N.E., Albuquerque, NM 87111.*

University competency controversy: The response

The lead "News and Comment" item (*SI*, Fall 1983) discusses the possibility of denying accreditation or even revoking it from a student "whose statements demonstrate such basic misunderstanding of the subject matter as to imply incompetency." However, it totally overlooks the question of what should be done about university professors who set exams that would allow a student to pass in spite of incompetency. If someone were to try to take my degree away because I had said something that revealed me to be totally incompetent in my field, my reaction would be: Why are you telling me this now? Why not have told me while I was still in university, while I was still young and flexible enough to have a better chance to repair that incompetency?

I expect that you are going to get a good deal of mail from readers pointing out that John Patterson's suggestion, if it were implemented, would do more harm than good. The fact that Patterson's own dean is an ardent creationist tells me more than I want to know about what sort would wind up judging competency. Even more fundamentally, inasmuch as the sanctions recommended by Patterson would tend to work against outspoken individuals while leaving untouched the person who kept his mouth shut, regardless of his incompetence, they would tend to discourage the more thoughtful student from expressing himself.

I think the rule should be that the university has one (rather extended) chance to deny a student credit for any course—while he is taking that course. If the professor screws up that one opportunity to properly test the competency of an individual, then things will simply have to remain screwed up forever.

Robert G. Blair
Arlington Heights, Ill.

If after reading about John Patterson's upholding science's integrity I have indeed understood what he means to say, I feel there is reason for alarm. Though it is quite clear that such students as he decries are merely looking to preach their own remarkable doctrines with the bastion of a degree to support their fancies, this does not mean they have no right to a degree. His appeal to a panel of "faculty experts" to decide each case is unfortunate to those of us in education overwhelmed with experts both during our

normal work hours and as we relax at home reading the *National Enquirer*.

Are the tests given by the university so simple that a student can pass them without a reasonable understanding of the discipline's foundations? If not, then the student who passes tests on tectonic-plate movement, carbon-14 dating, oceanic circulation, principles of stratigraphic interpretation, and the processes by which wind and water affect surface land forms deserves a degree stating that he knows these things. Whether or not he agrees with the scientific community is shaky grounds for demanding he recant. Freedom of speech does not give one the right to say anything he pleases, but it does give him the right to disagree in public with established science. Patterson might peek at what Gamaliel says in the very book his adversaries use as their Bible.

Perhaps the truly irresponsible are the professors who use the excuse of harmony on campus to refrain from publicly attacking and challenging headstrong creationists to substantiate their contradiction of believing one line of thought and getting a degree in another. Yet clever fighters always study the opponent as deeply as possible. Shall we deny creationists that opportunity? My stay in countries in which freedom of speech was not permitted has helped form a personal opinion that between truth and free speech the latter is paramount, because without it the former could not exist.

The earning of a degree has never had as a requirement a covenant to use it as one's professor should proclaim. Let us not start *that* in our age.

Herbert Lindee
Houston, Texas

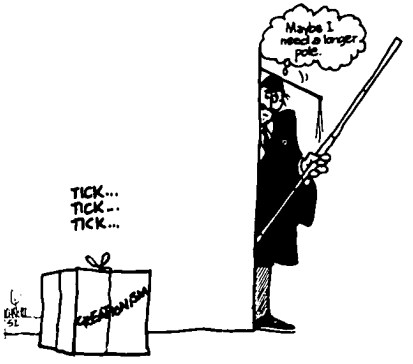
The easiest way to demonstrate the error in your sympathy for John Patterson is to reverse the facts.

If we posit a creationist professor calling for the flunking of students believing in evolution as demonstrably incompetent, you would surely vigorously object. You would surely reject any pious claim by the proponent that he was not condemning students for their beliefs, pointing out he was either lying or unaware of what he was doing. That a committee of "experts" would review the case would be derided as about as fair as the trial of Joan of Arc, since all the members would be strongly committed to creationism. In particular, you would denounce the possibility of revoking degrees as an attempt at lifelong censorship. You would probably end your editorial with a cry for the immediate firing of the creationist as demonstrably incompetent.

Note that Patterson's proposal is demonstrably one-sided. He does not call for all students to be reviewed and those incompetently defending orthodox ideas also be flunked. He limits it to those who are so rash as to mention unapproved ideas. Even if we assume that evolution has been properly attacked (and wouldn't the creationists jump on any case where they did let the student off as a forced acknowledgment that the creationist is right, and wouldn't you howl?), it is still an extra burden on just this minority of students. The effect is thus to condemn students for their beliefs. It doesn't matter whether Patterson wishes to disavow this effect or not. It would still exist.

David Carl Argall
La Puente, Calif.

John W. Patterson's statements are the strangest emanation from the skeptical community since a few years ago a correspondent in the *Humanist* praised the Soviet Union for its "freedom from religion." How can you grade people for what they say "after passing the course or after being graduated"? How can you fail people for what they believe, which is an interior mental



state?

When I was an atheist student in a parochial high school, I had no trouble getting high grades in my religion courses. The good sisters knew my views, but they graded me on my *knowledge*, not my beliefs. Similarly, you don't have to believe in the theory of evolution (or relativity, or continental drift) to know what it is. We might think it irrational not to believe, but then we are all irrational on some subject.

The larger issue is state provision of education. It would seem as queer a notion as state provision of news, were it not traditional. If we were all forced to buy the same newspaper, what a battle there would be over its editorial policy!

Taras Wolansky
Kerhonkson, N.Y.

I read the article on Dr. Patterson's fight against the creationists, and I am afraid I can't agree with his viewpoint.

I agree that pseudoscientists and creationists with degrees (i.e., Dr. Duane Gish) give credence to false ideas. But to fail a student because of comments or activities outside of class only gives the opposition stronger arguments to use to demonstrate the "closed minds" and "intransigence" of true scientists.

A faculty member should make formal tests that would demonstrate the incompetence of a student in class rather than relying on conduct outside of class to determine competence.

John M. Minker
Citrus Heights, Calif.

I read with interest the account of John W. Patterson's stand against passing creationist students in scientific disciplines at the Iowa State University. Prof. Patterson will without doubt have some hard battles at hand. I wonder whether in the course of these the following argument may on occasion be of help?

Creationist students, it appears, answer examination papers in the spirit of the course, and against their own convictions, in order to obtain university grades, whence they will be better placed to spread creationist doctrines, undermining the principles of science. What then would they and their followers think of a militant atheist going, likewise, hypocritically through theological education and examinations in order to preach, once ordained, on ethical behavior, while at the same time denouncing the hollowness of religion from the pulpit and denying the existence of God? Would creationists consider such comportment acceptable, or would they expect and commend the church to intervene?

Felix E. Planer
Blonay, Switzerland

John Patterson will respond to these comments in the next issue.—ED.

Effects of paranormal beliefs

I read with great interest Jerome Tobacyk's article about the "Reduction

of Paranormal Belief" (*SI*, Fall 1983). Since Tobacyk himself mentions some of the weaknesses of his study in the concluding paragraph of his paper, I will not deal further with them. However, another of Tobacyk's points should not remain uncontested.

He claims (p. 57) that "history provides many illustrations of how certain paranormal beliefs have crystallized into ideologies destructive to individuals and society, indeed sometimes to human life itself (e.g., witchcraft, Nazism, the Jonestown case, etc.)." No doubt paranormal beliefs, especially if supported, say, by certain "parapornographic" best-sellers, can cause great harm; I need only mention so-called "alternative medicine" or other medical humbuggery. My position on this matter is on record (cf. pp. 4-6 of *SI*, Summer 1983).

Tobacyk claims, however, that there is some sort of *causal* connection between paranormal beliefs and criminal and other outrages. He does not submit any evidence in support of this claim, and I strongly doubt that he would be able to provide such evidence. Truzzi (*Zetetic Scholar* 10 [1982]:152) and Hövelmann (*Zetetic Scholar* 12 [1983], in press) have argued that superficial correlations between paranormal beliefs and destructive ideologies should not be translated as causation. The influence of German occultism on the rise of Nazism, as compared to that of economic and other interests, is completely *negligible*. The same is true, though perhaps not to quite the same degree, of what Tobacyk calls "witchcraft." And a recent book, *Violence and Religious Commitments: Implications of Jim Jones's People's Temple Movement*, edited by Ken Levis (University Park: Pennsylvania State University, 1982), clearly shows that Tobacyk's claim that paranormal beliefs were at the roots of the Jonestown mass suicide is highly questionable, to say the least.

Gerd H. Hövelmann
Marburg Lahn
West Germany

Jerome Tobacyk is to be applauded for his efforts to teach his students the principles of skeptical inquiry. Unfortunately, he made a serious error in claiming that "twenty-four of the 25 items showed a change in pre-test and post-test scores reflecting lesser belief." Of these 24 *apparent* changes, 17 were not statistically significant at the .05 level. Since the null hypothesis says there was no change, failure to achieve significant results dictates that one fails to reject the null hypothesis. Thus, if you cannot reject the null hypothesis, you are not permitted to say there was change. This does not mean there was no change, but it surely means the evidence is not strong enough to render such an assertion for 17 of the 24 items in question.

I have no doubt that Tobacyk's overall reported change was "real," i.e., not due to chance. However, in attacking the claptrap that deserves critical attention we must also apply the same standards to our own efforts.

Walter W. Hudson, Ph.D.
School of Social Work
Florida State University
Tallahassee, Fla.

Creationist pseudoscience

Robert Schadewald's article "Creationist Pseudoscience" (*SI*, Fall 1983) was very informative. I am glad that the scientific establishment is beginning to respond to creationism in language understandable to the layman. I think the popularity of pseudoscience and its literature stems from the fact that, in this century, science and its terminology have proliferated so rapidly that the layman finds it about as comprehensible as Egyptian hieroglyphics. The Bible "scientist," on the other hand, is anxious to gain converts (and of course realizes the futility of presenting his arguments to the "Satan-blinded" scientists). As a result, creationists always skillfully manipulate

popular emotions and prejudice (e.g., "My ancestors were human. Sorry about yours!").

Schadewald's approach to the question of creationism is a sound one, i.e., that of forcing its proponents to state their alternative to evolution *in detail* and then examining their models scientifically. When this is done, the fallacies and contradictions of this pseudoscience are openly revealed. The problem is that the creationists have always managed to structure their debates with evolutionists so that the latter appear to be in defensive retreat. This makes the creationists look victorious in the eyes of the public.

Larry Merwin
Canon City, Colo.

I have found that a correct followup to "Creationist Pseudoscience" manages to leave the theology question to the creationists and so leaves them ammunition.

That ammunition, however, blows up in their hands to their discomfort if one asks them: With all the evidence of an earth 4 billion years old, and with all the physical evidence of evolution, supported by every known science, do you not hate, curse, revile, and condemn God as a heretic for creating the universe contrary to your doctrine.

That is, the "creation scientists" are the disbelievers, not the evolutionists.

Lybrand P. Smith
Torrance, Calif.

When one concentrates on pointing out errors in content and technique in the works of others, as the SKEPTICAL INQUIRER does, one must be especially careful to avoid errors oneself. Hence, I was distressed to note erroneous information in the article "Creationist Pseudoscience."

On page 27 is the sentence: "Yet angiosperms appear suddenly in the early Cretaceous, along with mammals." I am not a vertebrate paleontologist, but I understand that mammals date from at least the Late Triassic (Stokes, 1973, *Essentials of Earth History*, p. 332). Moreover, the same book (p. 319) indicates that an Upper Triassic plant, *San miguelia*, may be the oldest angiosperm.

Of course this doesn't affect Schadewald's argument, but it does give "creationists" ammunition.

R.A. Davis
Paleontologist and
Curator of Collections
Cincinnati Museum of
Natural History
Cincinnati, Ohio

Paraterminology

Those who challenge scientists dedicated to proving the existence of paranormal phenomena are often—like Mark Antony at Caesar's funeral—unable to be blunt. They must answer purveyors of nonsense with the Roman orator's tact: "Friends, and countrymen, Rhine, Hasted, Eisenbud, and their fellow parascientists are all honorable men." To call them dishonest or fraudulent not only is ethically questionable; such calumnies may bring slander or libel suits. More important, it would be self-defeating; public aspersions, as Antony surmised, turn off all in the audience except those already on your side.

Nevertheless, paranormal research is rotten with deceit, not just with the intentional fraud from the Gellers and the Girards, but with the self-deceit of honorable men who have spent their professional lives pursuing the will-o'-the-wisp, discovering only that squinting helps them to "see" it better. (I'm aware that there are many good parapsychologists who honestly go about their work, not victims of deceit. Alas, they don't publish much.)

When John Hasted calls psi a "jealous phenomenon" to rationalize

why children can't psychically bend paperclips unless all observers leave the room or, better yet, the kids take them home to work on, how is such gross foolishness distinguishable from fraud? When scientists like J. B. Rhine interpret a bell curve representing a random distribution of events by discarding the bulk of the middle and calling one side of the curve proof of psi phenomena and the other side evidence of "psi missing," one is strongly tempted to stop mincing words and call these men frauds. Were it not for our better upbringing, we would scream "liars" and "frauds" at SRI researchers Targ and Puthoff, who twist and turn their words, repeatedly contradicting themselves in defense of their bungled experiments on psychic phonies.

But how should we address those guilty of deceit on apparently unconscious levels? I propose using the terms "paraliar" and "parafraud" to describe those who, with questionable intent, perpetuate deceit. I define a paraliar as one who continues to tell an untruth though aware of evidence that demonstrates its falseness. I define parafraud as one who spreads blatant falsehoods with apparent sincerity.

Though it may be impossible to distinguish paradeceivers from true frauds and liars because of the difficulty in knowing the thoughts and intentions of another person, it is nonetheless not too difficult to know when a person is blind to his or her own illogic and continues to spread absurdities.

Friends, skeptics, and countrymen, by using the terms above I hope we will no longer hesitate to call a paraspade a paraspade whenever we see one.

Andrew Skolnick
New York, N.Y.

Flashblindness

Have you (or your readers) heard this one?

A researcher of psychic phenomena spent a night in a haunted house. He was delighted to encounter a ghost, and was even able to communicate with it. He asked it to pose for a photograph so that he would have proof of the encounter, and the spirit graciously consented. But, unfortunately, in the conditions of the darkened house, the picture did not turn out.

You see, *the spirit was willing, but the flash was weak.*

Warner Clements
Beverly Hills, Calif.

Biorhythms: Three More Nails in the Coffin

Biorhythms theory is interesting for a statistics teacher because it provides a lot of examples apt to introduce many statistical tests or to help in the discussion of the general statistical method of hypothesis testing.

For the purpose of my teaching and also intellectual curiosity, I have examined three cases to test whether there is any influence of the biorhythmic curves on that sort of day.

First I checked the biorhythms of 747 Catholic priests on the day of their death. I repeated the operation on 803 persons involved in road accidents on the day of the mishap. Finally, I calculated the biorhythms of a few tennis and ping-pong players on a set of 42 days of especially good performances and a set of 41 days of especially bad performances.

My preferred methodology consists in establishing the probability models under the H_0 hypothesis that the values of a particular biorhythm are selected only at random. Those models are quite simple. Then I apply the Kolmogorov-Smirnov test for fitting those theoretical models to the observations. This method is general, simple, and powerful. Any student who has learned the statistical tests in an introductory course is capable of applying it.

What are the results obtained for those three examples? Quite predictably, no significant relationship was detectable between the biorhythms and the day of the death; nor with the day of a road accident; nor with the performance in tennis or ping-pong. Not only is there no significant relationship but, in fact, the *fitting* of the "random only" H_0 models is pretty good.

If any reader is interested, I shall be happy to supply him with a detailed paper.

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Egyptian ships

In a recent letter (*SI*, Summer 1983) regarding Barry Fell, Marshall McKusick made several remarks I take exception to. He said, "The Egyptians are a singularly poor choice as culture heroes to ancient America, because historians question whether ships of Egyptian registry traveled even as far as Crete." He seems to believe that those of us who believe the Egyptians were capable of travel upon the Mediterranean and the Red Sea are somehow to be equated with pyramidiocy and superdiffusionism. I'd like to point out that the Egyptians were quite capable of building ships. The one found next to Cheops's pyramid by Kama el Mallaka measures 43.4 meters long and 5.9 meters wide at midship, and this is longer than the longest known Viking ship, the *Sutton Hoo*, which the British Museum estimates at 27 meters in length. I would also like to point out the article by Abdel Monem A. H. Sayed entitled "The Recently Discovered Port on the Red Sea Shore" (*Journal of Egyptian Archaeology* 64, p. 69) and his subsequent observations on stone anchors in vol. 66 of the same journal, which argues convincingly that the Egyptians did indeed have the capability of sea travel.

This is in no way, of course, a defense of Barry Fell. If the Egyptians had made contact with Mesoamerica, one would expect them to have introduced the plough, the potter's wheel, and a pyramid structure that had some resemblance to their own, other than the fact that we have chosen to attribute the same name to both of them.

It is McKusick's statements regarding the Egyptian pyramids that are most inaccurate. His statement that they were rare is of course his judgment. According to Dr. Ahmed Fakhry, there are more than 70 known pyramids in Egypt and no one knows how many lie beneath the sands of the desert. I would not use the term *rare* to describe them.

John C. Deaton
Berkeley Calif.

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